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INFANTRY ASSOCIATION
WASHINGTON, D.C.

AUGUST, 1919

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3. TO PROMOTE COMPLETE UNITY AND HARMONY THROUGHOUT THE MILITARY SERVICE BY THE ELIMINATION OF PROMOTION AS THE PRINCIPAL OR MOVING CAUSE FOR LEGISLATION. WE WILL THEREFORE ADVOCATE THE SINGLE LIST FOR PROMOTION.

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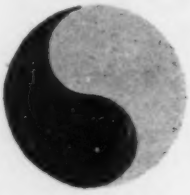

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INFANTRY JOURNAL

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Revised Covenant of the League of Nations[1]

THE High Contracting Parties, in order to promote international cooperation, to achieve international peace and security by the acceptance of obligations not to resort to war, by the prescription of open, just and honorable relations between nations, by the firm establishment of the understandings of international law as the actual rule of conduct among governments, and by the maintenance of justice and a scrupulous respect for all treaty obligations in the dealings of organized peoples with one another, agree to this Covenant of the League of Nations.

ARTICLE ONE

The original members of the League of Nations shall be those of the signatories which are named in the annex to this convenant and also such of those other states named in the annex as shall accede without reservation to this covenant. Such accessions shall be effected by a declaration deposited with the Secretariat within two months of the coming into force of the covenant. Notice thereof shall be sent to all other members of the League.

Any fully self-governing state, dominion or colony not named in the annex may become a member of the League if its admission is agreed to by two-thirds of the Assembly, provided that it shall give effective guarantees of its sincere intention to observe its international obligations, and shall accept such regulations as may be prescribed by the League in regard to its military, naval and air forces and armaments.

Any member of the League may, after two years, notice of its intention so to do, withdraw from the League, provided that all its international obligations and all its obligations under this covenant shall have been fulfilled at the time of its withdrawal.

ARTICLE TWO

The action of the League under this covenant shall be effected through the instrumentality of an Assembly and of a Council, with a permanent Secretariat.

ARTICLE THREE

The Assembly shall consist of representatives of the members of the League.

The Assembly shall meet at stated intervals and from time to time as occasion may require, at the seat of the League, or at such other place as may be decided upon.

The Assembly may deal at its meetings with any matter within the sphere of action of the League or affecting the peace of the world.

At meetings of the Assembly, each member of the League shall have one vote, and may have not more than three representatives.

ARTICLE FOUR

The Council shall consist of repreesntatives of the principal Allied and Associated Powers, together with representatives of four other members of the League. These four members of the League shall be selected by the Assembly from time to time in its discretion. Until the appointment of the representatives of the four members of the League first selected by the

[1] Furnished by the State Department, June 25, 1919.—THE EDITOR.

Assembly, representatives of Belgium, Brazil, Spain and Greece shall be members of the Council.

With the approval of the majority of the Assembly, the Council may name additional members of the League whose representatives shall always be members of the Council; the Council with like approval may increase the number of members of the League to be selected by the Assembly for representation on the Council.

The Council shall meet from time to time as occasion may require, and at least once a year, at the seat of the League, or at such other place as may be decided upon.

The Council may deal at its meetings with any matter within the sphere of action of the League or affecting the peace of the world.

Any member of the League not represented on the Council shall be invited to send a representative to sit as a member at any meeting of the Council during the consideration of matters specially affecting the interests of that member of the League.

At meetings of the Council, each member of the League represented on the Council shall have one vote, and may have not more than one representative.

ARTICLE FIVE

Except where otherwise expressly provided in this covenant, or by the terms of the present treaty, decisions at any meeting of the Assembly or of the Council shall require the agreement of all the members of the League represented at the meeting.

All matters of procedure at meetings of the Assembly or of the Council, including the appointment of committees to investigate particular matters, shall be regulated by the Assembly or by the Council and may be decided by a majority of the members of the League represented at the meeting.

The first meeting of the Assembly and the first meeting of the Council shall be summoned by the President of the United States of America.

ARTICLE SIX

The permanent Secretariat shall be established at the seat of the League. The Secretariat shall comprise a Secretary General and such secretaries and staff as may be required.

The first Secretary General shall be the person named in the annex; thereafter the Secretary General shall be appointed by the Council with the approval of the majority of the Assembly.

The Secretaries and the Staff of the Secretariat shall be appointed by the Secretary General with the approval of the Council.

The Secretary General shall act in that capacity at all meetings of the Assembly and of the Council.

The expenses of the Secretariat shall be borne by the members of the League in accordance with the apportionment of the expenses of the International Bureau of the Universal Postal Union.

ARTICLE SEVEN

The seat of the League is established at Geneva.

The Council may at any time decide that the seat of the League shall be established elsewhere.

All positions under or in connection with the League, including the Secretariat, shall be open equally to men and women.

Representatives of the members of the League and officials of the League, when engaged on the business of the League, shall enjoy diplomatic privileges and immunities.

The buildings and other property occupied by the League or its officials, or by representatives attending its meetings, shall be inviolable.

ARTICLE EIGHT

The members of the League recognize that the maintenance of peace requires the reduction of national armaments to the lowest point consistent with national safety and the enforcement by common action of international obligations.

The Council, taking account of the geographical situation and circum-

stances of each state, shall formulate plans for such reduction for the consideration and action of the several governments.

Such plans shall be subject to reconsideration and revision at least every ten years.

After these plans shall have been adopted by the several governments, the limits of armaments therein fixed shall not be exceeded without the concurrence of the Council.

The members of the League agree that the manufacture by private enterprise of munitions and implements of war is open to grave objections. The Council shall advise how the evil effects attendant upon such manufacture can be prevented, due regard being had to the necessities of those members of the League which are not able to manufacture the munitions and implements of war necessary for their safety.

The members of the League undertake to interchange full and frank information as to the scale of their armaments, their military, naval and air programs and the condition of such of their industries as are adaptable to warlike purposes.

ARTICLE NINE

A permanent commission shall be constituted to advise the Council on the execution of the provisions of Articles 1 and 8 and on military, naval and air questions generally.

ARTICLE TEN

The members of the League undertake to respect and preserve as against external aggression the territorial integrity and existing political independence of all members of the League. In case of any such aggression, or in case of any threat or danger of such aggression, the Council shall advise upon the means by which this obligation shall be fulfilled.

ARTICLE ELEVEN

Any war or threat of war, whether immediately affecting any of the members of the League or not, is hereby declared a matter of concern to the whole League, and the League shall take any action that may be deemed wise and effectual to safeguard the peace of nations. In case any such emergency should arise, the Secretary General shall, on the request of any member of the League, forthwith summon a meeting of the Council.

It is also declared to be the friendly right of each member of the League to bring to the attention of the Assembly or of the Council any circumstance whatever affecting international relations which threatens to disturb either international peace or the good understanding between nations upon which peace depends.

ARTICLE TWELVE

The members of the League agree that, if there should arise between them any dispute likely to lead to a rupture, they will submit the matter either to arbitration or to inquiry by the Council, and they agree in no case to resort to war until three months after the award by the arbitrators or the report by the Council.

In any case under this Article the award of the arbitrators shall be made within a reasonable time, and the report of the Council shall be made within six months after the submission of the dispute.

ARTICLE THIRTEEN

The members of the League agree that whenever any dispute shall arise between them which they recognize to be suitable for submission to arbitration and which cannot be satisfactorily settled by diplomacy, they will submit the whole subject-matter to arbitration. Disputes as to the interpretation of a treaty, as to any question of international law, as to the existence of any fact which if established would constitute a breach of any international obligation, or as to the extent and nature of the reparation to be made for any such breach, are declared to be among those which are generally suitable for submission to arbitration. For the consideration of any such dispute the court of arbitration to which the

case is referred shall be the court agreed on by the parties to the dispute or stipulated in any convention existing between them.

The members of the League agree that they will carry out in full good faith any award that may be rendered and that they will not resort to war against a member of the League which complies therewith. In the event of any failure to carry out such an award, the Council shall propose what steps should be taken to give effect thereto.

ARTICLE FOURTEEN

The Council shall formulate and submit to the members of the League for adoption plans for the establishment of a permanent court of international justice. The court shall be competent to hear and determine any dispute of an international character which the parties thereto submit to it. The court may also give an advisory opinion upon any dispute or question referred to it by the Council or by the Assembly.

ARTICLE FIFTEEN

If there should arise between members of the League any dispute likely to lead to a rupture, which is not submitted to arbitration in accordance with Article 13, the members of the League agree that they will submit the matter to the Council. Any party to the dispute may effect such submission by giving notice of the existence of the dispute to the Secretary General, who will make all necessary arrangements for a full investigation and consideration thereof. For this purpose the parties to the dispute will communicate to the Secretary General, as promptly as possible, statements of their case, with all the relevant facts and papers; and the Council may forthwith direct the publication thereof.

The Council shall endeavor to effect a settlement of the dispute, and, if such efforts are successful, a statement shall be made public giving such facts and explanations regarding the dispute, terms of settlement thereof, as the Council may deem appropriate.

If the dispute is not thus settled, the Council, either unanimously or by a majority vote, shall make and publish a report containing a statement of the facts of the dispute and the recommendations which are deemed just and proper in regard thereto.

Any member of the League represented on the Council may make public a statement of the facts of the dispute and of its conclusions regarding the same.

If a report by the Council is unanimously agreed to by the members thereof other than the representatives of one or more of the parties to the dispute, the members of the League agree that they will not go to war with any party to the dispute which complies with the recommendations of the report.

If the Council fails to reach a report which is unanimously agreed to by the members thereof, other than the representatives of one or more of the parties to the dispute, the members of the League reserve to themselves the right to take such action as they shall consider necessary for the maintenance of right and justice.

If the dispute between the parties is claimed by one of them, and is found by the Council to arise out of a matter which by international law is solely within the domestic jurisdiction of that party, the Council shall so report and shall make no recommendation as to its settlement.

The Council may in any case under this Article refer the dispute to the Assembly. The dispute shall be so referred at the request of either party to the dispute, provided that such request be made within fourteen days after the submission of the dispute to the Council.

In any case referred to the Assembly all the provisions of this Article and of Article 12 relating to the action and powers of the Council shall apply to the action and powers of the Assembly, provided that a report made by the Assembly, if concurred in by the representatives of those members of the League represented on the Council and of a majority of the other members of the League, exclusive in each case

of the representatives of the parties to the dispute, shall have the same force as a report by the Council concurred in by all the members thereof other than the representatives of one or more of the parties to the dispute.

ARTICLE SIXTEEN

Should any member of the League resort to war in disregard of its covenants under Articles 12, 13 or 15, it shall *ipso facto* be deemed to have committed an act of war against all other members of the League, which hereby undertake immediately to subject it to the severance of all trade or financial relations, the prohibition of all intercourse between their nationals and the nationals of the covenant-breaking state, and the prevention of all financial, commercial, or personal intercourse between the nationals of the covenant-breaking state and the nationals of any other state, whether a member of the League or not.

It shall be the duty of the Council in such case to recommend to the several governments concerned what effective military, naval or air forces the members of the League shall severally contribute to the armed forces to be used to protect the covenants of the League.

The members of the League agree, further, that they will mutually support one another in the financial and economic measures which are taken under this Article, in order to minimize the loss and inconvenience resulting from the above measures, and that they will mutually support one another in resisting any special measures aimed at one of their number by the covenant-breaking state, and that they will take the necessary steps to afford passage through their territory to the forces of any of the members of the League which are cooperating to protect the covenants of the League.

Any member of the League which has violated any covenant of the League may be declared to be no longer a member of the League by a vote of the Council concurred in by the representatives of all the other members of the League represented thereon.

ARTICLE SEVENTEEN

In the event of a dispute between a member of the League and a state which is not a member of the League, or between states not members of the League, the state or states not members of the League shall be invited to accept the obligations of membership in the League for the purposes of such dispute, upon such conditions as the Council may deem just. If such invitation is accepted, the provisions of Articles 12 to 16 inclusive shall be applied with such modifications as may be deemed necessary by the Council.

Upon such invitation being given, the Council shall immediately institute an inquiry into the circumstances of the dispute and recommend such action as may seem best and most effectual in the circumstances.

If a state so invited shall refuse to accept the obligations of membership in the League for the purposes of such dispute, and shall resort to war against a member of the League, the provisions of Article 16 shall be applicable as against the state taking such action.

If both parties to the dispute, when so invited, refuse to accept the obligations of membership in the League for the purposes of such dispute, the Council may take such measures and make such recommendations as will prevent hostilities and will result in the settlement of the dispute.

ARTICLE EIGHTEEN

Every treaty or international engagement entered into hereafter by any member of the League shall be forthwith registered with the Secretariat and shall, as soon as possible, be published by it. No such treaty or international engagement shall be binding until so registered.

ARTICLE NINETEEN

The Assembly may from time to time advise the reconsideration by members of the League of treaties which have become inapplicable, and the consideration of international conditions whose continuance might endanger the peace of the world.

ARTICLE TWENTY

The members of the League severally agree that this covenant is accepted as abrogating all obligations or understanding *inter se* which are inconsistent with the terms thereof, and solemnly undertake that they will not hereafter enter into any engagements inconsistent with the terms thereof.

In case any member of the League shall, before becoming a member of the League, have undertaken any obligations inconsistent with the terms of this covenant, it shall be the duty of such member to take immediate steps to procure its release from such obligations.

ARTICLE TWENTY-ONE

Nothing in this covenant shall be deemed to affect the validity of international engagements such as treaties of arbitration or regional understandings like the Monroe Doctrine for securing the maintenance of peace.

ARTICLE TWENTY-TWO

To those colonies and territories which as a consequence of the late war have ceased to be under the sovereignty of the states which formerly governed them, and which are inhabited by peoples not yet able to stand by themselves under the strenuous conditions of the modern world, there should be applied the principle that the well-being and development of such peoples form a sacred trust of civilization and that securities for the performance of this trust should be embodied in this covenant.

The best method of giving practicable effect to this principle is that the tutelage of such peoples should be entrusted to advanced nations who, by reason of their resources, their experience or their geographical position, can best undertake this responsibility, and who are willing to accept it, and that this tutelage should be exercised by them as mandatories on behalf of the League.

The characters of the mandate must differ according to the stage of the development of the people, the geographical situation of the territory, its economic conditions and other similar circumstances.

Certain communities formerly belonging to the Turkish Empire have reached a stage of development where their existence as independent nations can be provisionally recognized subject to the rendering of administrative advice and assistance by a mandatory until such time as they are able to stand alone. The wishes of these communities must be a principal consideration in the selection of the mandatory.

Other peoples, especially those of Central Africa, are at such a stage that the mandatory must be responsible for the administration of the territory under conditions which will guarantee freedom of conscience and religion subject only to the maintenance of public order and morals, the prohibition of abuses such as the slave trade, the arms traffic and the liquor traffic, and the prevention of the establishment of fortifications or military and naval bases and of military training of the natives for other than police purposes and the defense of territory, and will also secure equal opportunities for the trade and commerce of other members of the League.

There are territories, such as Southwest Africa and certain of the South Pacific islands, which, owing to the sparseness of their population or their small size or their remoteness from the centers of civilization, or their geographical contiguity to the territory of the mandatory and other circumstances, can be best administered under the laws of the mandatory as integral portions of its territory subject to the safeguards above mentioned in the interests of the indigenous populations. In every case of mandate, the mandatory shall render to the Council an annual report in reference to the territory committed to its charge.

The degree of authority, control or administration to be exercised by the mandatory shall, if not previously agreed upon by the members of the League, be explicitly defined in each case by the Council.

A permanent commission shall be constituted to receive and examine the annual reports of the mandatories

and to advise the Council on all matters relating to the observance of the mandates.

ARTICLE TWENTY-THREE

Subject to and in accordance with the provisions of international conventions existing or hereafter to be agreed upon, the members of the League (*a*) will endeavor to secure and maintain fair and humane conditions of labor for men, women and children both in their own countries and in all countries to which their commercial and industrial relations extend, and for that purpose will establish and maintain the necessary international organizations; (*b*) undertake to secure just treatment of the native inhabitants of territories under their control; (*c*) will entrust the League with the general supervision over the execution of agreements with regard to the traffic in women and children, and the traffic in opium and other dangerous drugs; (*d*) will entrust the League with the general supervision of the trade in arms and ammunition with the countries in which the control of this traffic is necessary in the common interest; (*e*) will make provision to secure and maintain freedom of communication and of transit and equitable treatment for the commerce of all members of the League. In this connection the special necessities of the regions devastated during the war of 1914–1918 shall be in mind; (*f*) will endeavor to take steps in matters of international concern for the prevention and control of disease.

ARTICLE TWENTY-FOUR

There shall be placed under the direction of the League all international bureaux already established by general treaties if the parties to such treaties consent. All such international bureaux and all commissions for the regulation of matters of international interest hereafter constituted shall be placed under the direction of the League.

In all matters of international interest which are regulated by general conventions but which are not placed under the control of international bureaux or commissions, the Secretariat of the League shall, subject to the consent of the Council and if desired by the parties, collect and distribute all relevant information and shall render any other assistance which may be necessary or desirable.

The Council may include as part of the expenses of the Secretariat the expenses of any bureau or commission which is placed under the direction of the League.

ARTICLE TWENTY-FIVE

The members of the League agree to encourage and promote the establishment and cooperation of duly authorized voluntary national Red Cross organizations having as purposes the improvement of health, the prevention of disease and the mitigation of suffering throughout the world.

ARTICLE TWENTY-SIX

Amendments to this covenant will take effect when ratified by the members of the League whose representatives compose the Council, and by a majority of the members of the League whose representatives compose the Assembly.

No such amendment shall bind any member of the League which signifies its dissent therefrom, but in that case it shall cease to be a member of the League.

ANNEX TO THE COVENANT

One. Original members of the League of Nations.

Signatories of the Treaty of Peace: United States of America, Belgium, Bolivia, Brazil, British Empire, Canada, Australia, South Africa, New Zealand, India, China, Cuba, Ecuador, France, Greece, Guatemala, Haiti, Hedjaz, Honduras, Italy, Japan, Liberia, Nicaragua, Panama, Peru, Poland, Portugal, Roumania, Servia, Siam, Tchecho-Slovakia, Uruguay.

States invited to accede to the covenant: Argentine Republic, Chile, Colombia, Denmark, Netherlands, Norway, Paraguay, Persia, Salvador, Spain, Sweden, Switzerland, Venezuela.

Two. First Secretary General of the League of Nations: The Honorable Sir James Eric Drummond, K.C.M.G., C.B.

Staff and Command[1]

By Major R. M. Johnston, Historical Section, G.H.Q., A.E.F.

THE question of training for staff service and high command comes up, now that the war is over, in a far more hopeful way than in the depressing period before.

Much light was shed on this difficult question by the events of last summer in France as viewed by those just a little behind the scenes, like the present writer. But it is neither permissible nor desirable as yet to discuss publicly the more intimate details of the working of our own Command and Staff, to say nothing of those of our allies, during the campaign of 1918. It so happens, however, that deductions parallel to those which might be drawn from their examination can be derived from some of the more obvious failings of the German General Staff system. It is possible, therefore, to secure the necessary illustrations from the enemy.

From the operations on the German side two incidents may be singled out. One of these occurred on the fourth day of the first Verdun attack, after the capture of Fort Douaumont; the other was the concluding phase of the first German offensive, the March offensive of last year, on the Somme. It should be said that the view given of these events of necessity reposes on imperfect evidence and may need reconsideration later; there is no question, however, as to their typical character in terms of Staff and Command. And, so as to establish some sort of cross angle on these two cases, reference will be made to two of the best known incidents of the German campaign of 1870: Alvensleben's attack at Vionville-Rezonville, and the Crown Prince of Saxony's advance through Roncourt on Saint-Privat.

In connection with Verdun it is always important to bear in mind that the operations passed through various stages of strikingly dissimilar character. Here we are concerned with the first phase only, a very short one. The French were weak in numbers, in matériel, in defensive preparations, in local disposition, in the Command, which had been through recent changes. The Germans made a straight attack, with a large preponderance of numbers and matériel, in part a surprise, very carefully worked out in detail. Success was immediate, and progressive over four days. On the fourth day the French finally collapsed. From Douaumont northwesterly to the Meuse, what was left of the French was virtually a mass of disbanded troops drifting back into Verdun. At Fort Douaumont no provision appears to have been made by the French Command to meet the steady German advance by establishing a garrison; there was nothing in the fortress save a few gun crews. What was worse, there was nothing at all between Douaumont and Verdun. So there is nothing surprising in the fact, as now admitted by the French, that, on the news coming in during the afternoon that the German infantry had occupied Douaumont, the town authorities set to work to pack up the archives with a view to the immediate evacuation of the city.

[1] Publication of this has been authorized by the Commander-in-Chief, A. E. F., through military channels.—R. M. J.

Yet the Germans failed to solve the Verdun problem because their system was a Staff system and nothing more. It had eliminated the flash of judgment and courage that converts unexpected opportunity into success. In all second and third section Staff work the detail is, of necessity, so minute, and accumulates to such immense quantities, that what is in reality nothing more than an average rule or system of probabilities becomes a set rule. It becomes a mathematical calculation to attack and penetrate the enemy's front line at a fixed and known point. The Staff can plot out every detail, can provide every man with a job, except, sometimes, the commanding general! The tale is told in our own service of a distinguished brigadier who, just before his own brigade opened a carefully planned attack, turned to the divisional chief-of-staff and plaintively inquired if he couldn't find some job for him to do!

But the mathematical certainty of an operation diminishes progressively. The Staff plan will normally work more accurately the first hour on the first day than it will the second; and so on. It is well just here to recall a fundamental military principle, one which remains in full vigor, though recent developments have tended to obscure it. This may be stated in some such terms as these—that in every military action, save immediate total surprise, the early stages are preliminary to a crisis; this crisis is generally unforeseen and always presents an unforeseeable combination of factors, especially of time and space, and this is the moment at which the decisive act should occur. In other words, the plan made by the Staff merely paves the way to a decisive situation which will present itself at the very moment when the Staff's plan is rapidly losing its mathematical value.

The attack on Verdun depended on the Staff's plan. Outside of the plan there was nothing to be done. It was merely for the Staff to look as far into the situation as it could and to make every provision for success. So the usual calculations were made—strengths, supply, distance, time and so forth. And everything was foreseen, except that at the very limit of prevision, at X line on Y day, the French infantry would collapse while the French Command would forget or would be unable to place a garrison at Fort Douaumont and supports between there and Verdun. Yet this proved to be the critical situation and moment of six months' terrific fighting.

What was the result? The farthest objective set for the German infantry had been reached. Reports from individual commanders and second section information indicating that it was possible to advance were set aside, and the Germans missed the one opportunity that was to come their way of capturing the city rather than attempt a move without complete Staff preparation. For the situation that had occurred went beyond all possible Staff prevision; yet it was absolutely normal in the sense that it had simply evolved to the point of the decisive crisis, requiring the most immediate and fullest play of military judgment and power. But the German system did not cover the contingency.

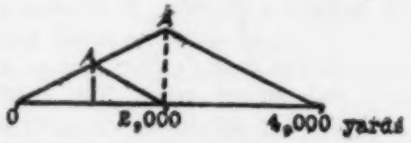
The case of last year's March offensive leads to the same conclusion and requires less ample demonstration. It will be remembered that the attack was on a front of about 80,000 yards, with Amiens, some 50,000 yards in, forming the natural apex of the triangle of ground the Germans might expect

to gain. Presumably the attack was planned and preparations were already in hand before the southern end of the allied line was weakened below safety point despite the protests of the British High Command. This weakening, together with the exceptionally strong resistance put up by the British at the northern end, eventually gave a very irregular bulge to the German gain, though even at that it still roughly showed a triangular form, as was to be foreseen.

Now an operation so large in terms of space, of numbers, and of time, required, among other things, a schedule of troop movements covering in some cases divisions several hundreds of miles away to be brought up, generally by short stages, sometimes over a period of as much as two weeks, with a view to being placed in line on the 1st, the 2d, or the Xth day. A formidable process, with a division in line to every 2,000 yards of front!

Incidentally, a point of some interest arises here. The experience of war has frequently demonstrated that a tactical adjustment or scheme that works admirably at a certain numerical coefficient becomes weak on the raising of that coefficient. The deployed line of the eighteenth century made a good battle order on open ground with covered flanks up to a front of, say, 3,000 or 4,000 yards. But with an army so large that this front was doubled, as with the Austrians at Leuthen, it became a source of weakness against an enemy able to beat the clock in concentrating on either flank. Much the same applies to the immensely long French line at Trafalgar, and possibly to that of the British at Jutland. In the case of Napoleon his theory of the massed force worked wonderfully well so long as his armies were small, especially in 1796 and 1814. When his masses became very big, particularly in 1812 and 1813, his system largely broke down, and his efforts to evolve a new one were not happy.

So with the western front attacks. It was soon plain that with those armies, under those general conditions, an attack was likely to penetrate in a well-defined triangular form and with the



distance of the apex from the base, or the total gain, to use a loose phrase, varying directly with the breadth of the base. Attacks on a front of 1,000 yards would give you a slight gain, on a front of 10,000 yards a considerable one. It is practically certain that the German General Staff concluded from this: therefore, an attack on a front of 100,000 yards will give a relatively greater gain, indeed a gain so great as to settle the enemy once and for all. They failed to realize what has just been said about the numerical coefficient.

Probably the chief reason why this apparently simple mathematical formula would not work was that a factor, which was negligible so long as the apex of the triangle was not more than 3,000 or 4,000 yards from the base, rapidly became important beyond that distance; while in such wide attacks as the German offensives on the Somme in March and on the Aisne in May it became predominant. This was the lengthening of the distance over which supply had to travel under peculiarly disadvantageous conditions. This factor worked adversely in geometrical ratio with the degree of penetration of

the enemy line. That this played a very big part in holding up the German advance southeast and south of Amiens, there can be no doubt. Yet this point is made incidentally only, for there is another way of putting the case more directly in line with the present argument.

At which stage was the German operation at its best, and at which stage was it at its worst? Just as in the Verdun, and indeed every other case, it is the initial stage that presents the best elements of mathematical certainty, and gradually, as the real crisis is reached, the means for dealing with it, at the hour and under the conditions presented, become weaker and weaker. In the first three days we find an effective attack and a carrying away of a large section of the British front; then for another two or three days a very rapid advance back of the broken line; and then, but not till then, we come to the real crisis, a crisis lasting perhaps 48 hours, perhaps the crisis of the whole war. For a considerable space southeast of Amiens there was no real allied line left, only small groups that could not have held up a serious attack. And just beyond, apparently within the German grasp, was the British line of communication, the Rouen railroad, a slender line, and a bad one because parallel with the front. Here, as the result of the initial stages of the fighting, were the vitals of the enemy exposed defenseless to almost any sort of an attack or even raid.

But no attack was forthcoming at that particular time and place, and why? Because no Staff plan could foresee and provide for precisely the crisis that had arisen; perhaps also in part because of the inability of the Germans to get supplies forward rapidly enough.

The German system of 1870 was also far from perfect, but it was different. Without attempting a comparison that might easily be misleading, it may be said conveniently that less depended on the Staff plan and more on the local initiative of the Command. At the moment when Alvensleben established contact with Bazaine's army near Vionville on the 16th of August, he believed, as did Moltke and his Staff, that Bazaine was 25 miles farther west. Alvensleben knew that the whole movement of the three German armies was based on that supposition. Yet he did not for an instant hesitate to change the direction of his corps from northwest to northeast and eventually to do very much more than this. For Alvensleben soon sized up the situation strategically and psychologically; the critical place and moment in the French retreat were there before him, and it was up to him to take one of those almost impossible chances in war that must be taken when precisely such a crisis arises. Every one remembers how Alvensleben, with little more than a corps, did not hesitate to assume the tactical offensive against Bazaine's great and splendid army. This was the turning point which led to the French capitulation at Metz six weeks later. No Staff plan could conceivably have provided either for the situation that arose or for the solution that Alvensleben applied.

At St. Privat the case is less well marked, yet of the same general character. All along the front the Germans had either been beaten back or were being safely held. But the Saxon Corps eventually got into line on the extreme left, and, largely owing to the initiative and judgment of the Crown Prince of

Saxony, swung around the extreme right of the French, forced them from Roncourt, outflanked St. Privat, and, by determining the withdrawal of Canrobert's Corps, persuaded Bazaine that he had been seriously defeated.

What may be deduced from these examples, examples that are not isolated for their period, but normal? Before answering this question, and to prevent misunderstanding, two warnings must be given: (1) This is not an argument in favor of an older as opposed to a newer method—the art of war moves forward, not backward; (2) the difficulty of improving the present Staff control method by restoring the Command to an adequate degree of influence is a matter of great difficulty; on the other hand, if we don't solve this problem we may as well accept the fact that some other army will.

As was said at the beginning of this article, there are many facts connected with the conduct of our operations in France by our Command and Staff that would fit in very easily with the views just exposed. We stand in danger of carrying a good thing too far, as the Germans did. That it is impossible to conduct modern war of large masses by a general without a well-trained staff has been gradually and conclusively demonstrated over an epoch beginning with, let us say, the year 1806. Towards the end of this epoch the most progressive armies have tended to reduce the part of the general so low as virtually to leave the Staff alone in control. But the pendulum has swung too far in this direction.

The peculiar conditions of fighting on the western front tended to reenforce this unhealthy tendency and to create the false impression that the crisis of a military operation is in its opening phase rather than at an incalculable point and time later. In the German army the overshadowing of the Command by the Staff has been a very gradual process, based mainly on the insidious influence of a necessary system of immense complexity. Our army at the present day is in even greater danger than the German that the Command may become unduly subordinated to the Staff. Both functions are essential and complementary; they both call for an improved system of Staff training and of high military studies.

Discipline Leaves Its Impress

There was still enough discipline left in a once-well-disciplined but now-mutinous German navy to provide a well-planned, perfectly disciplined sinking of an entire fleet. Discipline even brought their red flags to the winds as the ships settled instead of the rag of the Hohenzollerns. Germany knew discipline well. She still knows treachery.

Demobilization, Past and Present

By First Lieutenant Avery Tompkins, U. S. Army

THE process and rapidity of the demobilization of armies must, consciously or unconsciously, be contingent upon two factors: (1) the size of the belligerent armies, and (2) the economic condition of the countries involved. As late as the beginning of the twentieth century the interconnection of these two factors had not been commonly understood. Only at the close of the Boer War, with its attendant industrial complication, did demobilization present itself as an economic problem requiring careful study. It is a far cry from the close of the Revolution, when the entire Continental Army of some 12,000 men was disbanded in a day, to the present critical period of complex and systematic demobilization.

There are certain definite reasons why the present belligerent armies cannot be dismissed overnight. For the last hundred years two great forces have been at work, expansion in territory and expansion in industry. Expansion in territory has now reached its virtual limit. Industry has passed through successive stages of development from the revolutionary period of individual handicraft to the present period of integration of industry, with its large scale production, interdependent auxiliary trades and highly specialized workmen. To vitiate industry to the point of death by taking away not only skilled operatives but declaring the death penalty on whole businesses, for the purpose of raising an adequate army and of doing away with non-essentials, and then to glut the labor market with these same workmen at the conclusion of the war and simultaneously to take the lid off production, would be to cause such far-reaching disturbance, and national, even international turmoil that government and probably society would be endangered. It is to avoid such possibilities as these that demobilization has grown into a problem of the first magnitude.

It has been suggested that demobilization was not constituted an important problem at the close of the Revolution. This was true because the Army was a small one, even comparatively, and because of the high absorptive qualities of the country at that time. Trade, of course, suffered, due to aggressive measures adopted by England, but agriculture was in no way impaired. It was in fact agriculture that tided our country economically over those perilous years. A great expansive movement commenced, with a consequent wave of migration toward Kentucky, the Ohio Valley and the northwest, the latter assisted by the Ordinance of 1787, guaranteeing representative government and the formation of new states for settlers in this region.

The successive dates which drew the war to a close are not without interest. Although the war was virtually terminated by the surrender of Cornwallis, the cessation of hostilities did not officially take place until it was announced by Congress on April 11, 1783. This was followed by a proclamation to the same effect by Washington on April 19, 1783. On September 3 the defini-

tive treaty of peace was signed at Paris, and on November 2 Washington delivered his famous farewell address. The Army was disbanded the next day.

The year 1814 found the same movement of territorial expansion in progress, and, if anything, more accentuated. Though the War of 1812 was distinctly a naval war, its conclusion found us with an army numbering 38,186. The rapid reduction of this army to 10,000 on the declaration of peace, and the consequent discharge of some 1,800 officers, could in no way be called a menace to social equilibrium. Instead, not only were there increasing attractions for the agriculturally inclined, but manufactures were finding their stride, incident to the introduction of steam as a motive power in 1810. In fact, the war brought complete independence from English manufactures and a new stimulus for production.

The War of 1812 was ended by the Treaty of Ghent, which was signed on December 24, 1814, and hostilities ceased forthwith. One armistice was arranged during the war (August 9, 1812), but it was never put into effect, as it failed of ratification by this government.

The war with Mexico in 1846 was an outgrowth of the territorial expansion movement, resulting in the annexation of considerable territory, including California, Utah and Arizona and parts of Colorado, Wyoming and New Mexico, covering in all some 523,032 square miles. To attain victory our Army had been increased from 30,890 at the commencement of the war to 104,284. When the war was concluded by the signing of the Treaty of Guadalupe-Hidalgo on February 2, 1848, its ratification on May 30, 1848, and the Presidential Proclamation of Peace on July 4, 1848, a general spirit of retrenchment in national expenditures set in. Consequently, by the end of the year the entire volunteer force was disbanded, and the Regular Army had been reduced to 10,317.

The Mexican War came midway in a twenty-year period which marked the most remarkable industrial development achieved in the United States. The development of the railroad, the sewing machine, the telegraph, and special implements dates from this time. Altogether, the growth of industry, coupled with the insistent attraction and possibilities of the west, formed an ideal combination for the stabilization of social and economic conditions throughout the land.

The War of the Rebellion came to an end with the surrender of Lee on April 9, 1865, though operations on a minor scale continued until the capture of Kirby Smith on May 26, 1865. The war was not officially terminated until April 2, 1866, a year after the surrender, when the President formally proclaimed peace. Demobilization of the northern armies commenced during April of 1865. It was the policy of the Government to carry out demobilization with the greatest possible speed. To effect this the units were discharged at the most convenient place for the unit as a whole, a system not unlike that of the present. So it was that by November 22, 1865, 800,963 men had been mustered out, and by November 1, 1866, 1,023,021 volunteers had been released from service, leaving only 11,043. These figures are not entirely significant, however, for as the Secretary of War stated; "The work of discharging and returning to their homes 1,034,064 volunteers would have been completed

within *three months* but for the necessity of retaining in service part of that force."

The difficulties of demobilization were even less for the South, for after the surrender their forces simply went home without any attempt at formal release by units.

The wonder of historians has been excited by the ease with which these suddenly disbanded armies were reabsorbed into national life. For the South this may be accounted for by the revival of the cotton industry consequent upon the insistent demand for this commodity. This tided the South over a perilous period, though even then the situation was not without its grave aspects. The war had ended through the complete economic exhaustion of the South, and it has taken her years to recover. But for the North there came directly an era of prosperity. The day of the corporation had dawned, coming as a result of the increase of labor-saving devices. A new sense of organization arose, a general tendency towards integration and consolidation of enterprise that has continued unabated. At first labor greatly feared the introduction of labor-saving devices lest unemployment should mount while wages diminished, but it was quickly demonstrated that, as both demand and production increased astonishingly, prosperity was in store for both labor and capital.

This was one factor, probably the greater of the two, that entered into the solution of the demobilization problem at this time. The second factor was territorial expansion, perhaps exaggerated in importance by some historians, but highly important nevertheless. The government cession of farms to discharged soldiers was of great and lasting benefit to the country, as it not only gave occupation to a large number of men but also increased the stability of domestic affairs. The Mississippi Valley was the region most benefited by this development, but the farther west was attractive to many, and a stream of settlers flowed towards the Pacific. Thus, between what might be termed absorption by the land and absorption by industry, the more than a million soldiers of the northern armies found employment and a considerable degree of prosperity, and this so quickly that demobilization was deprived of its terrors.

In the Spanish War a different ratio of conditions obtained. The Civil War had produced a large army while good times were in a nascent state, and grew steadily better after the declaration of peace. The War with Spain had required an army of only 280,564, or about one-fourth the size of the Union armies, while conditions at large continued prosperous. It is not remarkable, therefore, that demobilization was effected with a minimum disturbance to national life and that it was carried out with little or no consideration as an economic problem.

Cessation of hostilities was effected through the "peace protocol" signed at Washington, August 12, 1898. The definitive Treaty of Peace was signed on December 10, 1898, at Paris, though peace was not proclaimed by the President until April 11, 1899. An order for the demobilization of 100,000 volunteers was issued on August 18, 1898, six days after hostilities ended. Acts of Congress required that at the end of the war the entire volunteer force should be discharged from the service and the Regular Army reduced to a peace basis. It was thus made necessary to discharge

110,202 volunteers, 28,834 regulars, and substantially all the 5,216 volunteer officers. The task was completed during 1898-1899, or seventeen months.

Though the western frontier of our country was by that time the Pacific, territorial expansion had not yet ceased. Whether or not the war is to be ascribed to imperialism, the fact remains that the Philippines, Guam and Porto Rico became ours. It would not be well to emphasize too much the importance of these acquisitions in relation to a facile demobilization, but undoubtedly their commercial possibilities were not entirely disregarded by the released volunteer. Nor, likewise, were the increasing opportunities of the west lost upon his less adventurous comrade. All of these circumstances contributed to a surprisingly simple demobilization.

It may not be without interest to examine briefly the demobilization of foreign armies after some more or less recent wars. For instance, the Franco-Prussian War was ended by the preliminary Treaty of Versailles, signed February 26, 1871, and by the definitive Treaty of Frankfort, signed May 20, 1871, ratifications being exchanged the next day. Paris had capitulated under the terms of the armistice of January 28, 1871, which likewise made noneffective the bulk of the French armies, which then numbered 534,452. The Army of the North was thereupon disbanded and all volunteers dismissed. France was temporarily demoralized, and Paris was the center of the turmoil. To guard the city against the communists Von Moltke permitted a garrison of 40,000. Other French forces were scattered and ineffectual, sufficient only to maintain internal order. The Germans mobilized during the war 1,146,000 men, while the German army of occupation numbered 630,736. By the terms of the treaty the evacuation of the country proceeded *pari passu* with the payment of the indemnity, permitting the gradual demobilization of the army. Directly the negotiations had been completed, the German reserve and Landwehr were disbanded.

A thoroughly agricultural nation has probably least to worry about from demobilization, an industrial nation the most. Both France and Germany in 1871 were agricultural countries, and France, even today, cannot be represented as an example of the most highly developed machine industry. Under such conditions Germany readily reabsorbed her armies. France would have done better had there been less of the political admixture. For Germany there came her great period of expansion, industrial and territorial. In fact, the results of the Franco-Prussian War, in a general way, may be compared to those of the Civil War, the North and Germany gaining prosperity and learning machine manufactures, the South and France suffering, but eventually rising to the top.

The Franco-Prussian War was similar to the Russo-Japanese War, and unlike the War of the Rebellion, in that it was a purely military war—that is to say, it was won through the destruction of the French forces by their being both outmaneuvered and outnumbered. The natural resources of either nation were not called into question, but military blow after blow was delivered until France was forced to give way in defeat within six months. The Russo-Japanese War, though it found Russia unprepared, and though Japan spent much energy in gathering and producing war material, was, after all, not an economic war. It was ended by the Treaty

of Portsmouth, signed September 5, 1905, and ratified October 14, 1905. An armistice was agreed to on September 1, 1905, on the understanding that it should take effect when the treaty of peace was signed. On September 13, at Sha-ho-tan, the protocol providing for the cessation of hostilities throughout Manchuria was signed.

Russia had mobilized during the war 1,365,000 men. The peace strength of her army was, however, about 1,042,000, leaving a surplus of 323,000 for discharge. These, to be distributed among a population of 143,000,000, could not possibly cause more than the most insignificant economic difficulty. Japan, on her part, had mobilized an army of 1,100,000, leaving some 568,000 to turn back to civil life among a population of only 47,000,000. We do not know accurately whether or not the return of these soldiers caused serious difficulties, but it seems unlikely, owing to the fact that Japan was then essentially agricultural and that her troops were victorious. To these remarks it should be added that mobilization and demobilization were an integral part of both the Russian and the Japanese military systems, a part, in fact, of their national life, and would naturally be taken by the public and the armies in a more or less perfunctory manner. It is not remarkable, therefore, that the records of demobilization of these armies are of meager character and afford a basis for only hypothetical study.

The Boer War, though antedating the Russo-Japanese War, was the most recent in which anything of an economic problem was presented. It was terminated by the signing of the Treaty of Vereeniging on May 31, 1902. By Article 1 of the Treaty the Boer orces in the field, amounting to 20,779, were required to lay down their arms forthwith, and by Article 2 it was provided that those in outlying districts would be "gradually brought back to their homes as transport could be provided."

The British Expeditionary Army, in addition to the Regulars, had been recruited in all parts of the Empire, and numbered on May 31, 1902, 446,435 men. It is of course impossible to give the dates of demobilization of such a heterogeneous army, as the members were demobilized in the home country or the colony, these lying in different parts of the world, but the interesting feature is that soldiers did return to England from South Africa to walk the country roads in a vain search for work. Industrial England, ever deep in labor troubles, was experiencing a foretaste of the most critical problem possible to her—unemployment.

The Great War drew to itself the entire material and spiritual resources of the world. All wars are at least military in character, but this was, in addition, an economic conflict. With attention fixed only on winning the war, both victor and vanquished were suddenly confronted with serious problems when at last victory was achieved. With armies numbered by millions, finances by billions and supplies by tons, the questions of what to do with this enormous quantity of material became paramount, now that its intended use was removed. The life of each nation had to be fundamentally adjusted to new conditions. Such a problem as this practically resolved itself into national and international demobilization.

For England this has been a difficult problem. With all her energy she had been producing war material. Now

she has had to turn her attention to turning out peace-time products, and more—she must, so far as humanly possible, prepare places for the millions of her returning soldiers. Under the guidance of the Ministry of Reconstruction, an advisory and not an executive department, a survey was taken and plans made long in advance of the end of the war. The survey developed the fact that about 60 per cent of the men in the army had positions waiting for them. Part of the problem was to bring man and employer together. Other difficulties that presented themselves had to do with the raw-material problem. Stocks of raw material were, in general, much depleted at the close of the war, and to replenish them required ships. To return the army also required ships, and it was only just that wounded and prisoners of war should be sent back first. So it was manifestly necessary to coordinate demobilization with the economic condition at home. When a job was waiting for a soldier, and there was sufficient material for him to work with, then that soldier would be sent home.

Such was the plan. To carry it out a rather complex system was evolved. There were certain classes of workmen for whom positions were not only waiting, but on whom production fundamentally depended. Miners, for instance, were a primary necessity, and they were returned to England as quickly as possible. Others, called "pivotal men," who were either employers or men to be used in the actual demobilization, were likewise released. In the systematizing of this scheme, cards were given out to each soldier, on which he was to fill out particulars as to himself, giving data regarding his previous employment, if he were married, if he had received from his former employer an undertaking to receive him back, etc. These forms were then to be forwarded to the Labor Exchange in the area where the man normally resided, and it was to be the business of the Labor Exchange to verify the statement. Employers on their side have been asked to send in cards requesting the return of those men whom they need, so that the card of the employer and the card of the man ought to meet at the Labor Exchange. When the employer has assented to taking an employe, a slip torn from the bottom of his data card is returned to him, constituting him a so-called "slip man," to whom preference will be given.

A further refinement has been made. The trades are divided into forty-two groups, arranged into a priority list according to their importance to the nation, the state of the supply of raw material in each, and so on. There exist preferences even among the priority groups, such as apply to married men, men of long service, and those few who have seen the war through from first to last. It was further arranged that the army at home and the overseas forces should be demobilized proportionately and simultaneously.

The plan has been severely criticized in that it works injustices on the many who feel they should be permitted a speedy discharge, and the cry of the army for immediate return home has been loud and insistent. But the problem is essentially an economic one and one that must find its solution through a careful attention to markets, labor and material. The possibilities of calamity from congestion of labor have been so great that it has been wise

for industrial England to act methodically and with all possible foresight.

Canada has modeled her plan of demobilization after that of the Mother Country, but has not carried it out to the same limits because her conditions are not quite similar. Canadian soldiers are returned in drafts of 500, selected and grouped with regard to their place of residence. They are then discharged as a group in any one of the twenty-two areas into which the country has been divided, in which their common residence lies. Their return is not based on industrial opportunity, but the Canadian Government maintains a complete record of their industrial qualifications and makes a real attempt to find positions for them before they embark. They are aided in this by a cable from overseas giving unit, names, demobilization area and other necessary information. In addition the discharged soldiers receive a very liberal gratuity from the government, which varies in amount according to the nature and duration of their war service.

Germany presents the usual spectacle of the defeated and demoralized army, though never before, of course, has demoralization been on such a scale as exists there now. A military defeat need not, and seldom does, produce national economic demoralization. The South, however, and the Boers fared nearly as badly as the Germans, because not only were they outmaneuvered and their forces beaten, but they were exhausted and crushed as well. According to the terms of the armistice, German forces were required to withdraw behind the Rhine within twenty-five days, and then demobilization was to commence. But with military authority practically abandoned, formal demobilization could hardly be carried out. Things arrived at such a pass that the Ebert government begged the soldiers to go home and demobilize themselves in as orderly a manner as possible. The government attempted to do something for the discharged men, giving them a work suit, a bonus of fifty marks, and another fifteen marks for traveling expenses, these gratuities being identical for officer and man alike.

Our own plan of demobilization is so well known that it need be only very briefly sketched. We have adopted a system somewhat similar to that of Canada. The return of our overseas forces has been dependent on shipping facilities, the units debarking at Atlantic ports to be reorganized for transport, thence to their cantonment areas, there to be discharged. This has reduced to a minimum the possibility of any area being flooded with discharged and unemployed soldiers at the expense of other regions which might be in need of labor. There has been no attempt at maintaining proportionate discharges of domestic troops with those returned from France, but rather demobilization has been carried out with utmost speed. Means for the reinstatement of labor have been organized by the United States Employment Service of the Labor Department, but it has not been necessary to carry it out with the finesse so necessary to England. Our own needs and conditions are unlike those of other countries. We embody, to a greater extent than any other nation, isolation, agriculture and highly developed industry. Consequently, for us demobilization has been our own peculiar problem.

Thus, within six months after the signing of the armistice, we had demobilized a total of 2,010,671, of these

106,476 being officers and 1,904,195 enlisted men. Such a report compares favorably with the time required to demobilize the small force employed in the Spanish-American War, which took something over a year. Of those discharged 1,000,000 had been returned from overseas by May 7, 1919, and the residue have been coming back at an average rate of 300,000 a month.

Our solution of the demobilization problem has been our own, based on our own needs and our own ability to assimilate our men with a minimum of shock to social and economic conditions under a suddenly renewed status of peace. How well we are succeeding rests for the future to determine.

Name of war	Hostilities ceased	Treaty signed	Peace proclaimed	Army demobilized	Number discharged	Time required
Revolution	April 11, 1783	Sept. 3, 1783	April 11, 1783	Nov. 3, 1783	About 12,000	Nov. 3, 1783
War of 1812	Dec. 14, 1814	Dec. 24, 1814	.....	Dec., 1916	27,955	Two years
War with Mexico....	Mar. 5, 1848	Feb. 2, 1848	July 4, 1848	Dec. 1, 1848	93,967	9 months
Civil War (Un. Army)	Apr. 9, 1865	.....	Apr. 2, 1866	Nov. 1, 1866	1,023,021	20 months
Spanish War	Aug. 12, 1898	Dec. 10, 1898	Apr. 11, 1899	Nov. 1, 1899	144,252	17 months

Commend Him

In the *Washington Star* of June 24, 1919, we find the following very apropos remark:

You are too stingy with your words of commendation.

When you know that a person has improved, or has done something praiseworthy, why don't you compliment that person?

Don't be fulsome, but natural and honest.

No matter how big a man is in this world in a professional or a business way, he likes to know his efforts are appreciated when he does something out of the ordinary, something he feels is worthy of him.

You can think of many instances when friends of yours have done something you admired immensely, something you even wished you might have been able to do as well.

You may have told others about it, but why did you not tell the one most interested—the doer?

It does one good to be recognized and appreciated.

Unthinking, unmeaning words of praise do more harm than good, but when you know what you are talking about pass the sunshine along in the guise of credit where it is due, and you will find yourself sharing in the happiness.

Military Security—How It May Best Be Accomplished

By Lieutenant Colonel Henry H. Brown, 32d Infantry

FOREWORD

THE writer has had an opportunity, during many years' service both in the Guard and federal service, to study the problem of military security as applied to the country at large. The ideas herein expressed are the result of that experience. He would be glad to have the ideas criticized freely by those with ideas of their own on the subject. He deals only with those male citizens of this country who will, at proper age, be subject to military duty.

PHYSICAL TRAINING

The first step in the preparation of the youth of the country for military service is physical training. I think everybody is agreed on that. We know now that a great many thousands of the men found physically unfit during the recent war could have been fit for service had they had the benefit in early youth of properly controlled physical training. Let us, then, take the boy when he has become acclimated, so to speak, in the grammar school, say, at eight years of age.

Age Eight to Fourteen.—An adequate and carefully enforced truancy law should be in operation in every state, so that never again could it be said that in this great country a half million young men could be found who could neither read nor write any language. Draft records will show this to be a fact developed during the draft just passed.

The period from eight to fourteen is the time spent by the boy in the grammar school. I would devote this period to teaching the principles of physical training. Children found physically unable to follow the progressive trend of the instruction should be grouped under competent medical instructors and gradually brought up to the standard of their more rugged fellows by a careful and sympathetic procedure.

It is probable that some parents will object to the physical training scheme, even though it does not approach military training in any degree. They will want to send their children to private schools. This could be permitted only when the proposed school carried the principles of physical training in its curriculum, proper state regulation of such schools being necessary. The state should see also that no boy was forced to leave school under eighteen in order to help support the family. All boys should have four years of high school training, even though they could not hope to progress further with their education.

Age Fourteen to Eighteen.—It is assumed that this period is spent in high school. Cadet corps in practically all high schools are already established. The cadets should be uniformed and equipped by the state and should be under the supervision of a competent man as military instructor. This man should be a member of the faculty and provided with a salary sufficient to allow him to devote his entire time to the work. In too many cases the

instructor is expected to appear at the school once or twice each week, gets no pay for his services, and the rest of the time is engaged in making a living for himself and his family.

The physically unfit who have not been brought up to the standard would be cared for during these years in the same manner as during the grammar school period. Some cases will develop where it is patent that the young man cannot ever hope to reach the prescribed standard. The state should be big and broad enough to provide a system whereby these unfortunates could be taught some profession suitable for their needs.

Age Eighteen.—It is assumed that the young man has completed his high school education at this time. It brings him to the point where he must decide—or where his circumstances of life will decide for him—what he shall do. Financial conditions are paramount. If he is possessed of funds, he can continue his education in some college. Probably 20 per cent of all high school students will be able to go to college. The remainder will find it necessary to get a job in order to help out the family. So I would give the student at this time three alternatives: (*a*) The Regular Army; (*b*) the National Guard; (*c*) college where military instruction is under supervision of the Government.

Before he leaves the high school the young man has been questioned by the commandant of cadets as to his preference for the future. Let us say that he has a liking for the service and decides to enter the Regular Army. The commandant inquires into his family circumstances, the object being to determine whether or not his services are going to be needed by the family. The negative being the case, his name is entered on a list under the heading, "Regular Army." Let us say that he is so situated that he can go to college. In this case his name is entered under the heading of "College."

It is probable that these two classes have taken only about 20 per cent of the graduates. The other 80 per cent must go to work, so they are put down under "National Guard."

The list above mentioned is made out in triplicate by the commandant of cadets, on forms supplied by the state. When completed, one copy is retained, one forwarded to the Adjutant General of the state and the other mailed to the commanding general of the Depot Brigade to which the young man is to be sent—if he has elected to enter the Army. When he is to go to a college, a copy is sent to the commandant of cadets, in addition to the one sent to the Adjutant General of the state. In the event that the National Guard is selected, only two copies are necessary, one of which goes to the Adjutant General of the state. These lists will contain everything necessary for the proper making out of the service record of the young man, including the branch of service preferred.

Upon graduation the young man is given a vacation of one month, at the expiration of which time he must report at the appropriate point for duty. Those going to college would, of course, report at the beginning of the next course after their graduation from the high school. As their names would have been received during the month they would be expected, and a failure to show up would be reported at once to the proper office. The failure to report would be considered as evasion of military duty.

I will now take up the three alternatives in order.

THE REGULAR ARMY

At this time the strength of our Regular Army is purely conjectural, but it is probable, and certainly advisable, that Congress will provide for an army of four or five hundred thousand. We know that heretofore the Army has been maintained normally by voluntary enlistments. These, of course, came from all parts of the country, and no attempt was made to segregate them as to states. We know also that the Army has always suffered in the quality of its personnel by depending upon voluntary enlistments in peace times. My idea is that each state should be required to furnish its quota of this Regular Army, thus doing away with voluntary enlistments, perhaps not entirely, but an applicant for voluntary enlistment should be investigated thoroughly before admittance as to his special reasons for desiring service. The idea that a man could join the Army for the express purpose of getting "three squares a day" without working for it should be done away with.

When the state sent its sons into the service it would know that they would be placed always with troops from the same state. In other words, if a thousand men were sent to the Regular Army from California, they would know that they were going to be placed in a California outfit of the Army. Vacancies in that outfit would always be filled by California men. This could not, of course, hold good in all cases among the officers, especially of the higher grades, but a sincere effort should be made always to have the troops from any particular state commanded by officers from that state.

Morale.—The question of morale, or *esprit de corps*, in our Army has of late been given a great deal of prominence, and justly so. Morale officers are now in every division, with representatives in all the smaller units. These officers are casting around continually to find the best ways to increase the spirit of the troops. The greatest builder of morale in the service is the "home outfit" idea. By this is meant that every man takes pride in the outfit from his home town or state, and the people at home follow the fortunes of the outfit from their locality with a great deal of pride. How much greater this feeling would be if every organization in the Army was made up of men from some single locality! My regiment went to France last year with a total of 3,400 men and about 100 officers. Both groups were composed of men from nearly every state in the union. In France about 60 officers and 3,000 men were sent to other divisions, and then some hundreds of others came to us. The result was that the regiment came home with only 750 men and about 20 officers from the home town or locality. Does anyone believe that this sort of thing helps out the morale officer in his job of instilling into the men the pride in the organization we harp so much upon?

To return to the question of Regular Army service: We have seen in the foregoing that a certain number of young men would desire Regular Army service. The Adjutant General of the state would get lists of names from every high school in the state. These lists would, of course, be separate as to the final disposition of the young men. The list of those desiring Regular Army service would be consolidated and in

duplicate. One copy would be retained in the files of the office and the other sent to the proper depot brigade. The Adjutant General would be required to see that the men reported at the proper time for duty with the depot brigade.

In the event that too many young men, *i. e.*, more than the state's normal quota, decided to enter the Regular Army, the proper number would be drawn by lot and the remainder required to adopt one or the other of the two alternatives left. If less than the state quota should desire regular service, the Government would require the state to produce the men, leaving to the state the method of procurement, but stipulating that the required number be delivered at the proper time.

Period of Service.—The period of enlistment in the Regular Army and National Guard should be for three years, with no reserve requirements except that at the time of discharge the soldier would revert to civilian status and would not have to trouble himself further with military work, but would be subject to call by the Government until he reached the age of thirty-five. He would be required to notify the Adjutant General of his state of any permanent change of address or change of status which would incapacitate him for military duty during the reserve period.

When an emergency arose which required the calling in of reserves, each state would be called upon for its quota, which would be filled by taking those most recently discharged. If the required number could not be obtained in this fashion the Guard of that state could be called into service. Or, if it were deemed expedient, the Guard could be called into service in each state before reserve men were called upon. The latter method would produce younger men and is probably the better way.

THE NATIONAL GUARD

As stated in the early part of this article, it is probable that fully 80 per cent of all the young men would be needed to help support the family by the time they had finished high school. They would not be able to carry their education further, except by means of night schools or home study. Their days would be taken up with the problem of making a living. Since they represent the greater bulk of the militarily eligible population, some means must be provided whereby they can continue their military training. They cannot be permitted to go into the highways and byways of the working world without an effort being made to provide a system of military instruction suitable for their circumstances.

The National Guard, under the provisions of the National Defense Act of June 3, 1916, will, with certain amendments, provide this system. The law has not as yet had a fair trial, since practically all of the Guard has been in federal service since its passage. But enough has been learned of the law to show that it can be made successful.

Under this act, enlistment in the Guard is for three years, with four more years in reserve. I would amend the latter provision, making the reserve period the same as that above outlined for the Regular Army. The Guard must depend upon voluntary enlistments, which provision, or lack of provision, really, I would amend as shown in the foregoing. In this case, 80 per cent of the high school graduates would be going into the Guard.

These young men would know that, in the event of a sudden call for the Guard, they would go into the service of the Government with the fellows from their own locality and under their own officers, from the major general of the division to the second lieutenant. They would know that battle and all other losses would be filled by their friends and acquaintances from the old home town and vicinity. Talk of *morale* and *esprit de corps* to the men, under such conditions, would surely fall on fertile soil.

Each unit of the Guard should be definitely placed in a division, every part of which should be provided for in time of peace, so that when a call came, the division would go into the field intact, from the highest to the lowest. *If the officers are not considered competent to lead their men in battle they should never be allowed to command them in time of peace.* This would do away with the practice of removing Guard officers from their commands at the outbreak of war, as was done in so many cases during the war just finished. Of the many major generals in the Guard at the outbreak of hostilities, only one commanded a division in the field in France. But let us return to the prospective guardsman.

Civil Service Credits.—The guardsman has to get a job. Let the civil service laws be amended so as to give him at least 10 per cent in any examination under civil service, just as soon as he has been duly enlisted in the service of the state. This should apply to all honorably discharged soldiers of the Regular Army or Guard also. The number of men that would be affected by this lowering of the bars, so to speak, would not be great, *i.e.*, very few would really need the 10 per cent to help them pass the examination, but the moral effect both upon the young man and his parents would more than offset any deficiency in the quality of the personnel obtained through this method.

State Constabulary.—While on the subject of inducements to guardsmen it would be well to reiterate what has been said so many times by those who know. I refer to the imperative need for a state police force of some description to take care of internal disturbances, thus relieving the Guard from this necessary, but very unpleasant and discouraging duty. Discouraging, because it has been for years the greatest objection put forth by young men and their parents for their refusal to consider the Guard. Several states have maintained such police work for years with much success.

To Have the Employer Do His Bit.—Now another radical but common-sense departure from the old-established ideas concerning hours to be devoted to military training by the Guard. Heretofore all instruction has of necessity been given in the armory in the evening, except the maneuvers which came about once every two or three years. This period would ordinarily be of two weeks duration and meant that the guardsman had to forego any other vacation during the year if he attended the maneuvers. Due to the fact that employers objected to their employes leaving their work for this reason, and also because the man himself did not desire to give up his earned vacation, the Guard companies were usually only about 30 to 50 per cent strong when they reported for duty.

As an aftermath of the war the employer has learned a few things about his country, things he had never thought of before. He knows there are many ways in which he can "do his bit"

without shouldering a pack and rifle himself. We will find him more sympathetic about the claims we will put forth with relation to the military affairs of the nation. He will be glad to listen to people when they talk to him about the things he can do to help out, whereas, before the necessities of the war were brought home to him, he was at best only lukewarm.

One of these ways is to allow his employe who belongs to the Guard to drill in the afternoon instead of the evening and to allow him to take part in field service without giving up his vacation period. This is the view taken by *some* business men, and this was just after the border trouble in 1916.

When the Guard was sent home after that period of service, those of us who were commanding units soon found ourselves stumped when it came to getting recruits to fill up the companies. The border service had left a bad taste in their mouths, and very few of the old men would take the new oath required under the National Defense Act mentioned above. In casting around for inducements to present, the idea occurred that employers generally would be glad to allow their men to drill in the afternoon if the matter were presented to them in the proper way. So a meeting was arranged with the directors of the civic organizations of my home town, when the subject was broached. Let me say that all of the gentlemen present were business men and employers of prospective and active guardsmen. All of them agreed that employers generally would be glad to "do their bit" in the fashion indicated.

Afternoon Drill in the Guard.—The proposal was that employers should allow their men off on some afternoon each week for the purpose of receiving instruction in military work and to allow them to attend maneuvers each year without affecting their regular vacation. Thursday afternoon was selected as being the time when the business men could best spare their employes.

The employe was not to be docked because he was off for the afternoon, and the result would be that he would be getting paid twice for the same period of time. The National Defense Act, referred to above, provides that the member of the Guard would receive 25 per cent of the pay of his grade in the Regular Army, provided he attended the required number of drill periods. In addition to this pleasant feature, the guardsman was not forced to give up any of his evenings for military instruction. This, also, is one of the objections heretofore presented by men when approached for enlistment.

The biggest feature of this method—the afternoon drill—is that it would enable the officers of the company to arrange carefully thought-out plans for outside instruction, something hitherto entirely unknown in the Guard. When he had to depend upon armory instruction in the evening he was sorely handicapped in his endeavor to "get it over." The men were not interested, there being too much sameness about it, and consequently they very often did not show up at the appointed time. The company commander was in duty bound to see that they did attend, the result being numerous visits to the police court with offenders, with the attendant undesirable notoriety. This had a very great retarding influence on the minds of prospective recruits.

Under the proposed method, the young man knew that he had to show up for drill, as his employer was paying him for the afternoon. If he failed

to attend, he would be docked by the employer and also, of course, by the Government.

Gain in Money to City.—Then, too, the business men spoken to on this subject were impressed when told that the maintenance of a military company in the town meant that there came annually to the town about $10,000 in the form of payments to the enlisted men by the Government and about $1,000 to the officers. In addition to this, the state paid $1,200 per year to the company for expenses and an additional $250 at the end of the year. The sum paid to the men is arrived at by figuring 100 men at an average of about $8 per man. The captain receives $500 per year, the first lieutenant $300, and the second lieutenant $200.

The business men were shown that all this money came to the town solely because a qualified military company was stationed there and could accrue to the city in no other way; that is, the company would have to be one that qualified under the National Defense Act, or no money would be forthcoming from the Government. They were shown that all this money would be spent in the town and that the grocer, the butcher, the baker and every other firm would share in the trading for it. Believe me, when those business men saw this view of the situation, they all agreed that the thing was not only feasible but very desirable from a business standpoint.

Company Officers.—This is the most serious question of all in connection with the training of the Guard. As matters stand, the captain receives $500 from the Government each year—to use his case as an illustration—and therefore must have a business or position in civil life which will grant him a living for himself and family. It is necessary that he devote considerable time to his company. He must plan ahead so that when he takes his company into the country for a bit of field service in an afternoon—which is quite feasible—he has a program both interesting and instructive to the men. The average non-military person does not realize the amount of paper work to be done by the commander of a military company of 100 men. He cannot delegate this work to some other person. He must personally oversee it.

The compensation allowed, as above shown, does not appear to be much of an inducement to men who are qualified to undertake the military duties imposed upon a company commander, especially in view of the requirements placed upon them as officers of the Guard. This Guard captain is expected to measure up to the standard set by the best company commander in the Regular Army, not the average. So it is with the company he commands. It is judged by the standard set by the best company in the Army. No consideration is given to the fact that the two commanders are as far apart as the poles in opportunity and advantages.

The regular captain has his men with him all the time; he can devote his entire time to the instruction of the men; he is not worried because he loses men—he can make a requisition for more; he is well paid for his work and does not worry about a living for his family; and he has junior officers who can assist him at all times.

The National Guard captain, on the other hand, has the direct opposite of these features—nothing, in point of fact, in the way of encouragement or advantage except the small compensa-

tion mentioned. Yet he must measure up to the regular captain in all respects, or the record of himself and the company he commands suffers accordingly. To offset this—to give him a fair show—is a big problem. Usually it is met by encouraging some fellow with lots of money to take command of the organization, the question of his other qualifications for the job being of presumably small importance. Does not this answer some of the questions concerning the fitness of Guard officers? The pay of company officers, and especially of the commander, should be increased to at least 50 per cent of the pay of their grades in the regular service. I know from experience that they are required to do at least half as much work as the regular officer.

MILITARY SCHOOL

This is the third alternative of the youth when he leaves the high school. Since most colleges have already added military science to their curriculum, we will not dwell upon this to any extent, the only requirement being, of course, that *all* colleges and higher schools should be required to organize cadet corps, so that *all* young men would be forced to take their part in the training —that is, all but the physically unfit. It is believed that each state should take care of these unfortunates, to the end that they could be taught some useful profession suitable for their needs.

With each state required to furnish its quota for the Regular Army, with distinct state organizations therein, *i.e.*, all in a given body of troops coming from the same state; with the Guard filled to capacity all the time and with daylight instruction; and with all schools and colleges required to have military instruction, it is believed the problem would be solved.

On Universal Training

President Madison followed in the steps of his predecessors and made the following remarks in his message of December 3, 1816:

As a subject of the highest importance to the national welfare, I must again earnestly recommend to the consideration of Congress a reorganization of the militia on a plan which will form it into classes according to the periods of life more or less adapted to military service. An efficient militia is authorized and contemplated by the Constitution and required by the spirit and safety of free government.

The present organization of our militia is universally regarded as less efficient than it ought to be made, and no organization can be better calculated to give to it a due force than to give to it a due classification which will assign the foremost place in the defense of the country to that portion of its citizens whose activity and animation best enable them to rally to its standard. Besides the consideration that a time of peace is the time when the change can be made with most convenience and equity, it will now be aided by the experience of a recent war in which the militia bore so interesting a part.

Army Posts and Camps—A Study in Types

By Colonel R. E. Grinstead, Infantry

ORIGIN

IT DOES not require a profound study of the plans of army posts to enable one to recognize certain characteristics which are, with slight modifications, common to all of them, the most striking of which are the central, open, level area, rectangular or square—the "parade ground." This is bounded by a road on the four sides, and, except in arid regions, is covered with grass, which, being usually tenderly cared for in the growing season, gives the appearance of a huge carpet. About the parade and outside the roadway are straight rows, generally two, of buildings, the officers' quarters on one or two sides and generally opposite the barracks of the enlisted men. Sometimes the officers' quarters are on one side and opposite to a similar line of barracks, while on the second and fourth sides lines of office buildings face, similarly, lines of storehouses.

FIG. 1.—OLD FORT AT LEXINGTON, KENTUCKY, 1782.

The origin of this type is so well understood that this article lays no claim whatever for originality of discovery. But for the purpose of study, two early frontier forts are used merely as an historical beginning point. Fig. 1 shows the old fort at Lexington, Ky., an early and common type of wooden

stockade fort. Rectangular in shape and having a continuous timber wall or palisade, with a heavy gateway, it enclosed the living quarters, store rooms and shelter for animals and had a small assembly area for the garrison.

Not being liable to attack from a foe with more serious offensive power than that afforded by the low-power rifles of that time, the tomahawk, and the torch, this type was generally constructed of timber and had no outer works. Modifications of this plan appeared where the location of the fort made it liable to attack from a more scientific and persistent foe and armed with artillery. Fort Duquesne, built on the site where Pittsburgh now stands, a plan of which is shown in Fig. 2, was thus liable to such attack and was so attacked, and therefore had bastions. But both these types had the common characteristics of enclosed quarters and shelter for animals and material, and had the central assembly or parade ground.

A map of the United States showing the locations of forts of this type erected within each generation would show a series of zones, each new zone lying west of its predecessor, each new zone indicating the region of conflict between civilization and savagery. When the Indian decided at last to walk the white man's path all necessity for this type of fort disappeared. But scattered throughout the length and breadth of the land there remained scores of this type of posts, which, obsolete in form, became, nevertheless, a pattern for

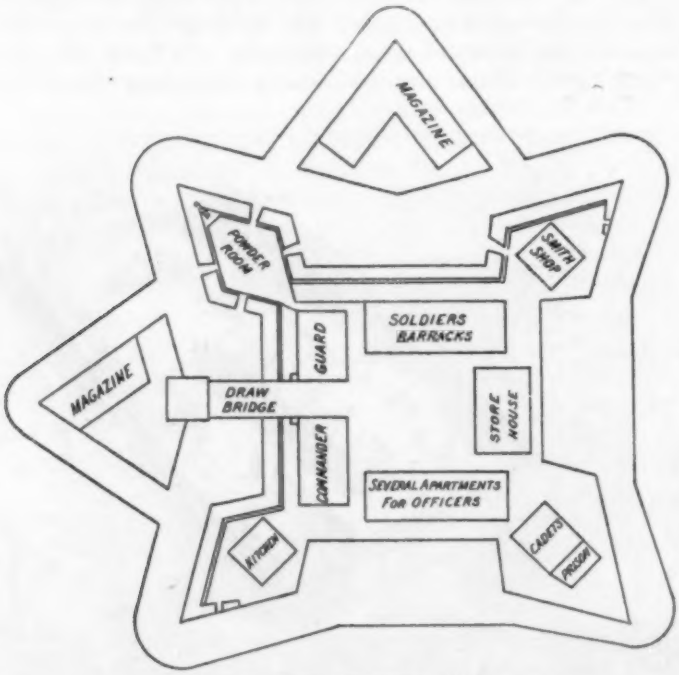


FIG. 2.—FORT DUQUESNE, 1754.

type, and around this type millions of dollars have been spent.

REASONS FOR CONTINUING THE TYPE

More difficult than that of tracing the origin of our types of army posts is the effort to find and follow the course of reasoning to justify the continuance of the same, if, indeed, there was a course of reasoning. The writer has found no record of any comprehensive scheme or plan of the War Department which has ever been used as a guide in remodeling or in original construction of posts. There have been nearly 4,500 projects properly designated as posts, forts and camps authorized, begun or constructed since the beginning of the Republic, and the cost of construction of posts and forts now in use ranges from $1,000 to $5,000,000, yet there has never been, excepting for some types of layout for regimental camps and camp centers (separately, not collectively), so far as the writer has been able to discover, any general, comprehensive scheme considered which contemplates and coordinates the needs and functions of all arms and services, efficiency and economy. In fact the conclusion arises that we are following a subconscious, traditional sentiment—"costumbre," and the line of least resistance.

When the frontier type of stockade fort was serving its maximum utility there were certain conditions and demands accompanying military service which do not obtain today, some requirements that are rendered obsolete now, and some vital requirements now were unheard of then. In those days garrisons were small, food was of limited variety, clothing, accoutrement and armament were simple, and all means of transportation were slow. Now the converse is true and, in addition, there are sanitary requirements and standards of living which were wholly unknown to our forebears of that time. In those days training consisted mainly of elementary movements in close order and simple ceremonies. Even training in marksmanship was considered superfluous. Maneuvers were unheard of. To briefly enumerate the present phases of drill and training would require pages. The parade ground of the pioneer fort answered the needs for the training of those days well enough, but now, enlarged though they are, they are so deficient in the variety of terrain necessary to training that even the smallest unit cannot be accommodated thereon. In fact, as regards layout and construction, the only requirement of a satisfactory fort of the pioneer days that obtains today is shelter for man and beast and for material.

Nearly all these changed conditions and demands from those old days to the present have been met, some of them in a most excellent manner. But one especially obsolete feature remains —the rectangle—inelastic, unchangeable, unadaptable. Once so small that the voice in moderate tones could carry across it, it is now expanded into a beautiful park of magnificent distances that must be walked around, or across, piped under or strung over. How many thousands of acres of empty parade grounds are today being marched around by vigilant sentinels in order to guard the lives and property on the other side. How many thousands of miles of needless hauling, walking, carrying, piping, wiring, etc., etc., result because the spirit of '76 (1676) dominates our ideas of a modern type of army post or camp. Meantime a thousand mowers, farm, lawn and gasoline, clicking merrily away, almost

keep the grass cut to the exact length to be most impressive to the delighted visitors who have come to visit "the army post we have heard so much about." This is to the neglect of the more or less important details of training the soldiery.

still adhere to is that its original plan contemplated quartering a garrison of fixed strength and organization, as though some principle governed organization as fixed as the laws of the Medes and Persians. Organizations change as to the numbers of units and

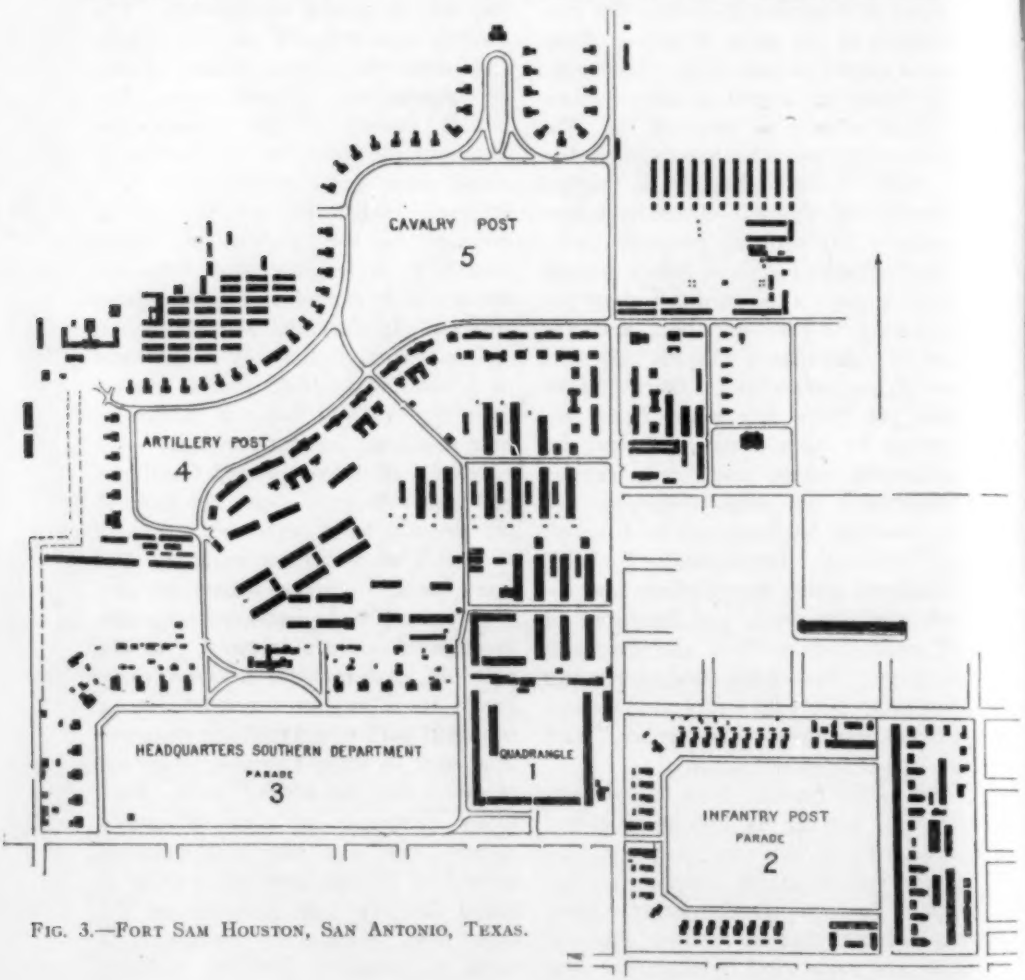


FIG. 3.—FORT SAM HOUSTON, SAN ANTONIO, TEXAS.

INELASTICITY OF OUR MODERN POSTS AND CAMPS

An equally serious defect in the obsolete type of army posts which we

strength of personnel, and will continue to change. The rectangle cannot be expanded; the command must. So the problem is usually *not solved* but shoved

into the future. Another subpost is built—with the same old completed, inelastic, unexpandable type.

There are many types of this patch work. Fort Sam Houston, San Antonio, Tex., is used first to illustrate. Fig. 3 shows practically the whole post. The original post is shown in the area marked 1. This area contemplated a garrison of twelve companies. Then it was decided to add an infantry regiment. The original plan could not be expanded, so a subpost, 2, was constructed. In the construction of this subpost the same error was repeated and, instead of building on a plan that was expandable it was "blocked in," complete as shown, incapable of expansion, with the same typical parade ground separating you from the place where you wanted to be. Then came another increase. The artillery and cavalry subposts were added, the artillery still being blocked off from future modification. The whole result is a bewildering maze of head quarters, subposts, units, buildings, roads and disconnected utilities and supply points, etc., incoherent and incoordinate, until it is utterly hopeless to attempt to make head or tail of it by signs, word or description. The only solution is to get a map—get, or learn to be, a guide.

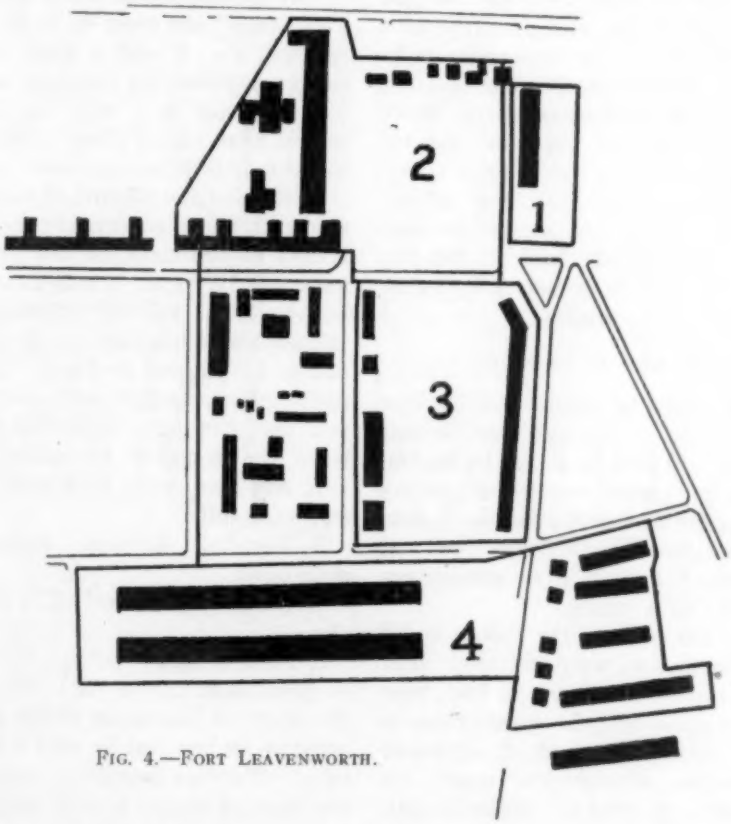


FIG. 4.—FORT LEAVENWORTH.

Fort Leavenworth, Fig. 4, shows the

same cycle of development. No. 1 shows the original post, having at that time a stone wall about it. Increased, the overflow went to No. 2, in this case U-shaped. The next increment was cared for by No. 3, still closing upon itself. A fourth increment was cared for by No. 4. Here is shown for the first time an effort to adapt the plan to the needs for administration, drill and training.[1] The arrangement for officers' quarters makes the battalion the unit. A street separates the officers' quarters from the barracks. Perpendicular from this street are side streets which accommodate battalion officers' quarters. These can be extended eastward. Immediately back of the barracks the country extends away to the limits of the reservation.

AS APPLIED TO CAMPS

The subject of camps will be mentioned only briefly and only because they are still with us, and as an illustration of how, when one is about to say that the problem of size and shape, this, that and the other, is finally fixed and determined, he will, if he pauses, say instead, "all is vanity."

Since the entry of the United States into the present war, and even after the plans of many camps had been decided upon and the construction of some actually commenced, the whole organization scheme was upset, rearranged, and added to. Infantry companies were increased from 150 to 250 men, more companies per regiment were added, fewer infantry regiments and more artillery regiments per brigade, and fewer infantry brigades per division, and new arms and units not previously named were added. There is scarcely a regimental area as originally built which can accommodate, unaltered, a regiment. One-half of the buildings will not accommodate the personnel for which they were intended. But the tendency to "block off" an area, and in some cases an entire camp, still held sway.

Passing over without comment some hastily selected camps which were mere "splotches," one camp in particular is selected, Fig. 5, and a study of this camp will reveal the following defects:

1. "Blocked in" with the typical central area, two of them in this case, as the only drill and maneuver ground.

2. Planned and blocked off to accommodate 150 men per infantry company, it had to accommodate 250 men; 13 units per regiment, it had to accommodate 15; 3 infantry regiments per brigade and 3 brigades per division, it had to be adapted to 2 and 2 respectively. Fortunately it was a tent camp and that fact gave it flexibility, but when the demands for added units were met there must have been many ingrowing pains.

3. Terminals stub-end instead of double-end.

4. Warehouses blocked off in original plans.

5. Point of supply not near the center of population. It is 0.83 mile from the center of population to the supply point by air line, but by road it is 2.37 miles. The unit farthest by road from the point of supply is 3.58 miles, but by air line it is 1.25 miles.

Contrasted with this but by no means ideal is a cantonment camp shown in Fig. 6, which had the following advantages not possessed by the former camp.

1. U-shaped, admitting of longitudinal extension (three such extensions

[1] It is possible that necessity—want of space—forced this plan to be adopted.

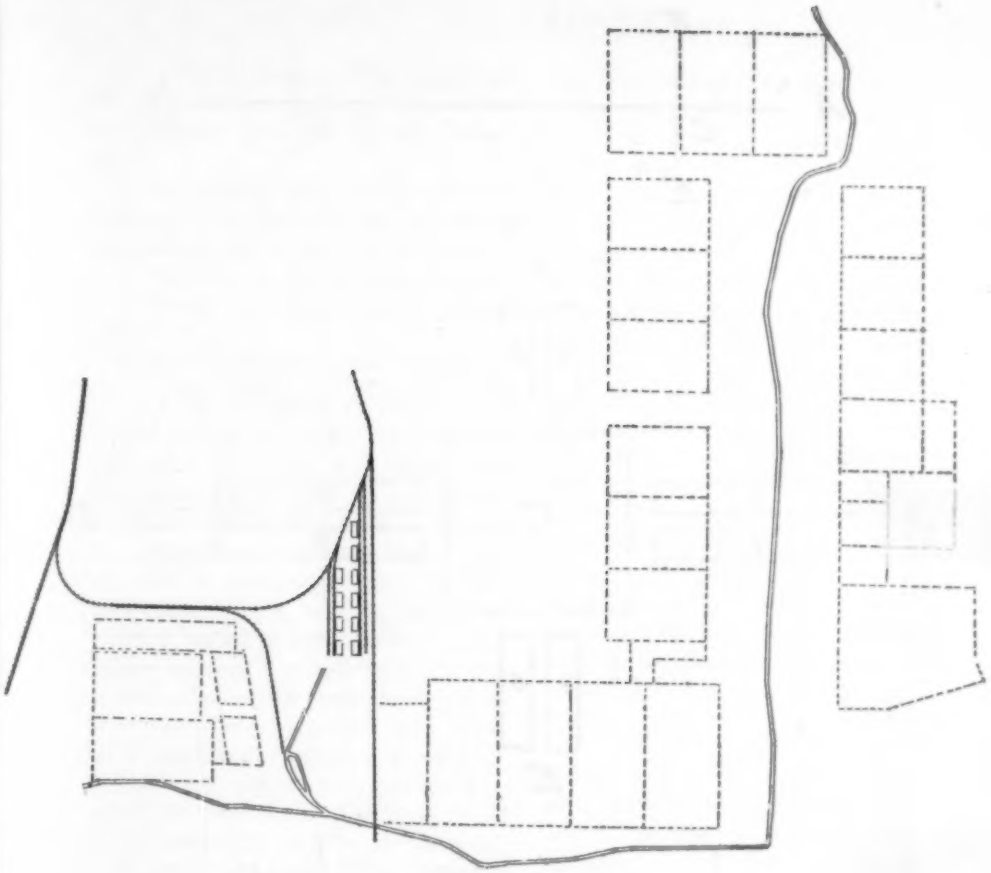


FIG. 5.

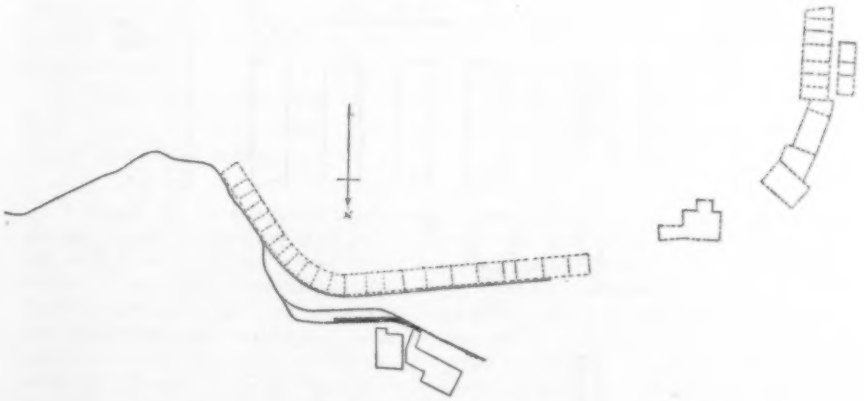


FIG. 6.—CAMP CUSTER.

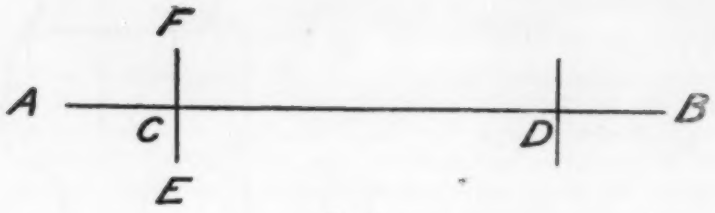


FIG. 7.

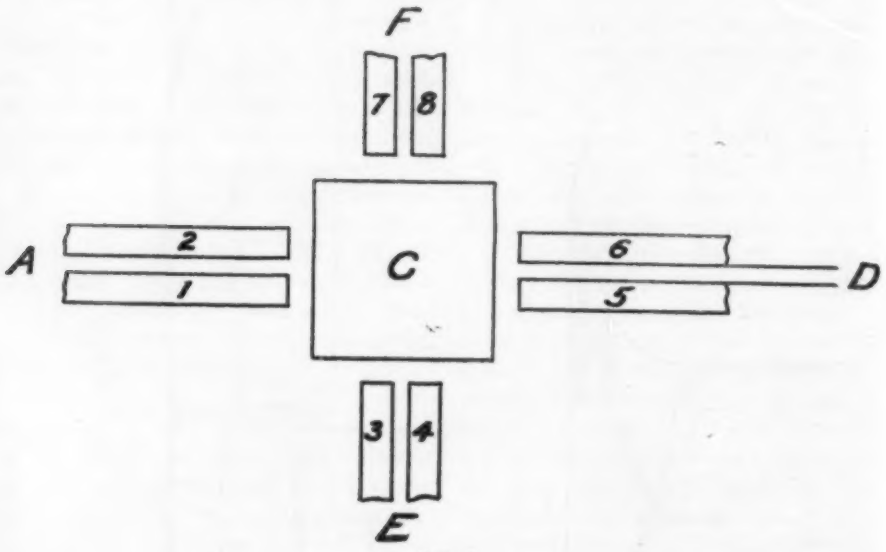


FIG. 8.

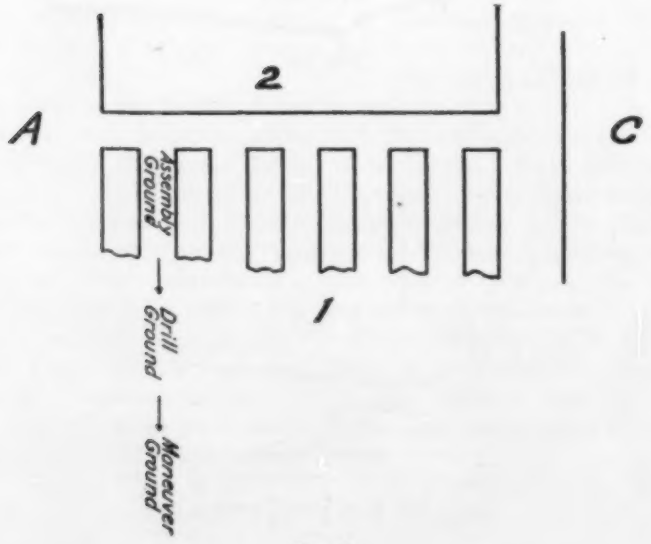


FIG. 9.

were actually made). This permitted the drill and maneuver grounds to be immediately accessible to each added unit.

2. An increased unit merely extended longitudinally, the last unit to be accommodated occupying the added area.

3. All railroad tracks double ended.

4. Routes to supply points nearly direct.

5. Point of supply nearly central.

A SUGGESTION AS TO POLICY

The writer now hopes to start the discussion by those who might find themselves interested by attempting to make certain deductions. He does not hope to state all the logical ones or even to have stated any of them correctly. He is merely trying to mark a beginning point, believing that others can, and it is hoped will, develop a more thoroughly worked-out policy. The principles suggested here apply with equal force to posts and camps.

1. Supply points and headquarters should be centrally located.

2. Terminals should be double ended.

3. Each unit should have allotted to it such areas, with buildings of such type, and all extending in such direction, as will admit of increase or decrease longitudinally.

4. There should radiate from a common center, or from centers lying on a common axis, all areas and routes.

5. Lines of communications should be as direct as possible.

6. Drill grounds should be dry, smooth, level, and easily accessible to all units, but they should be a continuous part of training and maneuver grounds.

7. Buildings should be as compactly built and placed as rules of sanitation and fire hazard will admit, this with the object of reducing guard duty, transportation, traffic, and utilities service to the simplest terms.

If the above principles are sound the following diagram may be considered as an effort to apply those principles. Fig. 7 is a general key diagram. AB is an axis upon which one or more centers lie, as at C. Fig. 8 shows a center, C, which is the headquarters of all units radiating therefrom, and which includes the supply point and utilities center. Areas 1 to 8 are unit areas, each of which can be extended longitudinally without encroaching upon any other unit. Fig. 9 shows an enlargement of area 1 in Fig. 8, showing separate buildings, a to f, with broken lines to indicate that extensions may be made. In this arrangement each building area may be extended without encroaching upon any other building or area. The space between buildings are assembly areas leading directly to training and maneuver grounds.[2]

[2] It must not be understood that any particular ground must be considered as maneuver ground to the exclusion of any other ground or place where man can be, and see, and act. Indeed, the whole camp, buildings, towers, streets, roads and gutters, should be made available and accessible for training and maneuver purposes. It has been a common fault in camps the writer has seen that such artificial features as buildings, streets, etc., were not used to illustrate tactical principles which were as essential as any others, and to training therein. Officers seemed to think that before they could commence upon a tactical exercise or problem they had to march away from the building areas of the camp to a place set aside for, and designated as, a training ground, whereas tactical principles exist wherever man can exist, and some tactical principles can be illustrated and applied from an upstairs barrack window.

The Macedonian or Greek Phalanx

By Gilbert Totten McMaster, M.D.

THE most celebrated corps of infantry of ancient times was the Greek Phalanx. Almost every famous general, king or emperor since then has had a picked body of soldiers capable of dealing the finishing stroke to the enemy, and the idea was derived from the history of this wonderful and unwieldy body of soldiers. The phalanx consisted of 16,000 heavily armed troops whose location was in the center of the battle line. Tit, Liv. L. XXXVII, n. 40, tells us: "Decem et sex millia peditum mara Macedonum armati fuere qui Phalangital appellabantur. Haec media acies fuit in frente in decem partes divisa."

They were armed with a sword, shield and spear, this latter weapon called by the Greeks "σαρισσα—sarrissa." The length of this spear was 21 feet or 14 cubits. The phalanx was divided into 10 battalions of 1,600 men each, drawn up 100 in front and 16 deep. Sometimes the file of 16 was doubled, as the exigencies of action demanded. So that at times the phalanx was 8 files, again 16, and then 32 files, but usually 16 files, as the nature of the ground upon which it maneuvered could accommodate no more.

The wings of this body of men, or as we today would call it, the flank, right or left of a command in line or in column χεραλα—cherala, meaning indirectly to lead by the hand. The ranks were called episatai—επισαται, indirectly to rest upon another—to rest upon anything. The file leader or front rank man was dubbed ωρωλοζάτης—orolosatus, from Ὥρα, a certain definite point in which a part is divided.

The space allowed each soldier on the march was 6 feet, viz., 4 cubits, and the ranks were 6 feet distant from one another. When advancing to attack the ranks and distance were closed up to 3 feet between files and 3 feet depth. As the phalanx drew nearer to the enemy, the files and depth were reduced still more, till each man occupied about 18 inches. Therefore the front of the phalanx in these cases may have been as follows: (1) 16,000 men at 16 deep—1,000 front—6,000 feet or 1,000 fathoms and 6 feet to a fathom—10 furlongs or a mile and a quarter; (2) case would be about one-half as much, or 5 furlongs; (3) case diminished another half and extended in distance would be 2 furlongs and a half. Polybius describes the phalanx in the second case, viz., 5 furlongs, each soldier taking up 3 feet in breadth and 3 feet in depth.

Their spears being 14 cubits long (21 feet) and the space between two hands being 4 cubits (72 inches), and that part projecting beyond the right took up 4 cubits—therefore the pike was advanced 10 cubits beyond the soldier who carried it. A cubit at this time was 18 inches. This being the case, the spears of the soldiers in the rank No. 5 projected 2 cubits beyond the front rank; those in rank No. 4 about 4 cubits; those in rank No. 3, 6 cubits; rank No. 2, 8 cubits, therefore the spears of the men in rank No. 1 advanced 10 cubits toward the enemy.

Ranks Nos. 6, 7, 8, 9, 10, 11 held their long spears raised and overlapping the forward ranks as much as possible to form a roof, also including their shields, thereby deflecting darts and stones projected at a distance. From the foregoing it will be observed that only five ranks were actually engaged; all the other ranks gave assistance to those in front by pressing forward and filling up blank files.

Polybius tells us that, as long as the soldiers of the phalanx "held together" their ranks in close order, "it was an impossibility for an enemy to sustain so great a weight cast upon him, or to make an opening into it and to break it." Polybius tells us that the phalanx was invincible, so long as it continued to be a solid phalanx. This happened very seldom, "for in order that such a condition of things might occur," the nature of the ground should be flat and even in the whole, and of large extent, without there being either tree, bush, intrenchment, ditch, valley, hill, or river" to hinder the momentum.

Paulus Aemilius declared that when he engaged Perseus, the last king of Macedonia, this rampart of brass and forest of pikes, impenetrable to his legions, filled him with terror and amazement. He did not recall seeing anything so formidable as this phalanx, and often afterward declared that this dreadful spectacle made so strong an impression upon him as almost to induce him to despair of victory.[1] Livy tells us how this machine of human beings defeated the Romans at the siege of a city (Z XXXII, n. 17):

Cohortes invicem sub signis quae cuneum Macedonum (Phalangem ipsirocant) si passent, vi perrumperunt emittebat—ubi conferti hastas ingentis longitudinis pral se Macedones objecessent velut in in constructam densitate clypearum testudineum, Romani pilis nequicquam emissis cum strinxissent gladios, neque congedi propius neque praecidere hastas poterant, et, si quam incidessant aut malfregissent, hastele fragmento ipso acuto, inter spicula integrarum hastarum, velut vallum explebat.

The Roman Legionary took up in a fight about 3 feet of space. Moving rapidly so as to defend himself, viz., to thrust, parry and strike, he actually required 6 feet, therefore twice as much room as the soldier of the phalanx, and thereby one legionary was singly opposed to two heavily armed phalanx men-at-arms of the first rank, and for the same reason actually made combat against ten—it was impossible for a single Roman soldier to make headway against ten men moving on him, all the time gathering impetus and volume of weight as opposing ranks clashed.

But the Roman, like a true soldier, thought out his problem, viz., mind versus brute force. At close quarters the Roman legionary advanced the right leg while hurling his spear, the left being put forward as his javelin left his hand; at the same instant the oblong shield was covering the left side and the sword drawn at the same interval. Rapidity, agility and muscular freedom of action won him superiority over a more densely armed man. The length of the legionary javelin in Caesar's time was 6 feet, the iron and bronze head being 3 feet long. Doubtless there was very little difference in the length of the Roman javelin of Paulus Aemilius' time and that of Caesar's day.

The Roman general observed that, as long as the phalanx sustained the solidarity on all its sides, it was invincible.

[1] Plutarch, in Paul Aemil, p. 265.

To maintain this compactness required peculiarly flat terrain of from 2 to 3 miles in extent, and such an ideal battlefield was difficult to find when the conditions of the action demanded their presence as a body. Therefore, if the Romans could break up this body of men—make an opening not only by their own force, but by the nature of the ground—the invincibility would cease.

It was observed that any unevenness at once caused a break in the line of the phalanx, being impeded by its own size. Then the huge shields, spears, helmets and breast plates worn by its members were in no way fitted for, as we would say "double time."

The Roman army, divided into small bodies, taking advantage of all situations and adjusting its ranks to the ground, had the advantage in elasticity of movement. It could file off and draw together, form detachments, rally and go through every kind of evolution, either in whole or in part, as occasion required. It possessed more strength than the phalanx, due to its activity and light armor.

Paulus Aemilius defeated Perseus' Greek phalanx by attacking in front. The Macedonians, keeping closed up, holding their pikes with both hands, presenting their usual iron rampart front to the enemy, could not be either broken or forced back. They made terrible slaughter of the Romans. At last the unevenness of the ground and extent of battle front hindered the Macedonians holding in all parts of the line. Paulus Aemilius observed that there were several large openings in the wall of pikes. Hurling fresh legionaries into these, not by a frontal attack, but general onset of detachments in different parts at one and the same time, he soon broke the huge phalanx.

The rout was furious. The soldiers no longer feeling secure by the proximity of their comrades, and unaccustomed to fighting singly, became panic-stricken and left the Romans victors, and their great military machine became history and a thing of the military scrap-heap of the past.

We read:

Secunda legio immissa dissipatit phalangem; neque ulla evidenteor causa victarial fuit, quam quod multa passim praelia erant, qual fluctuantem turbarunt primo, deinde disjecerunt phalangem; cujas confertal et intentes horrentis hastes intolerabeles vires sunt. Si carptim aggrediendo circum agere immobilem longitudine et gravitate hastam cogas, confusa strue implicantus: Si vero ab latere, aut ab tergo, aliquid tumultus increpuit, ruinal modo turbantur. Sicut tum adversus catervatum irruentes Romanas, et interrupta multifarian acie, obviam ire cogebantur: et Romani, quacum que data intervalla essent insinuabeant ordines suos. Qui si universe acie in frontem adversus instructam phalangem concurrissent—indurssent se hastis nec confertam aciem sustinuissent.

The Roman tells his own story. The Germans no doubt stole the idea of close order from the Macedonian army, for the Teuton mentality does not originate anything. They can take some one's idea and improve it, and that is why I have dug up this old body of troops. Let our army men read the works of Greek and Roman generals. Napoleon, the great French emperor, did that, and we have yet to produce a Napoleon.

Transporting Carrier Pigeons by Pack Train

By First Lieutenant Elbridge Colby, 33d Infantry

THE PROBLEM

1. To provide means of transporting carrier pigeons on pack animals for such territory as is unsuitable for wagon transportation on account of narrow trails, and unsuitable for man-packing on account of the distances.

2. The general character of these baskets to be similar in some respects to the infantry and cavalry baskets now in use by the Signal Corps and in some respects to the pack chest (Engineer Corps), the pack chest (Signal Corps), and the ammunition boxes (Ordnance Department) described in Figs. 120, 123, and 132-3 and sections 135, 137 and 139 of the Manual of Pack Transportation, Quartermaster Corps, 1916, combining the double-hinge principle of the infantry and cavalry baskets and the hammock carriers which avoid jars in the same infantry and cavalry baskets with the principle of accessibility embodied in the pack chest and ammunition boxes, which were made with the specific purpose of extracting con-

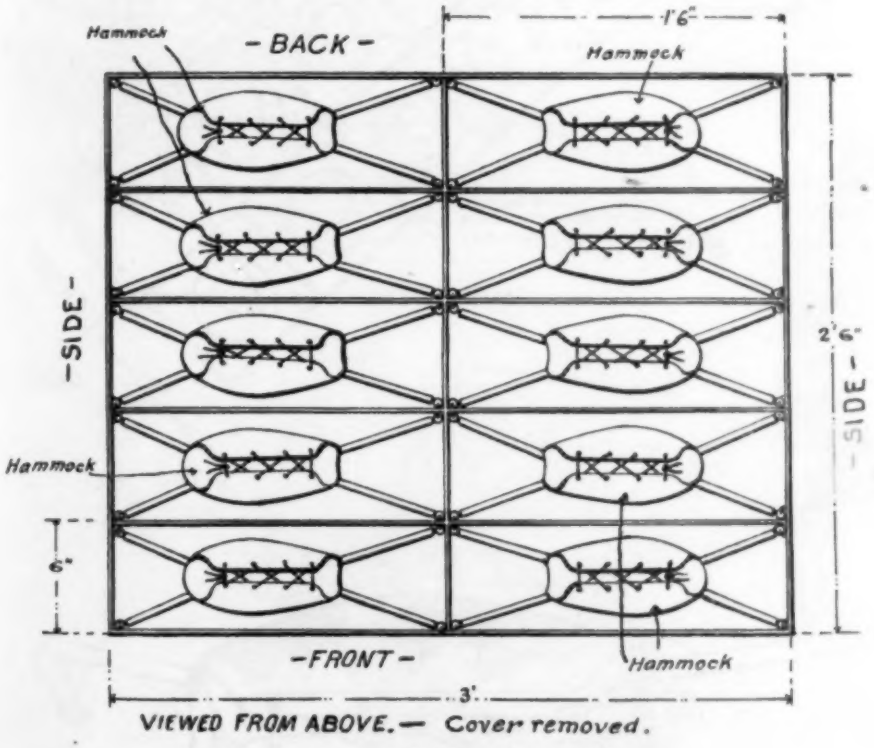


FIG. 1.

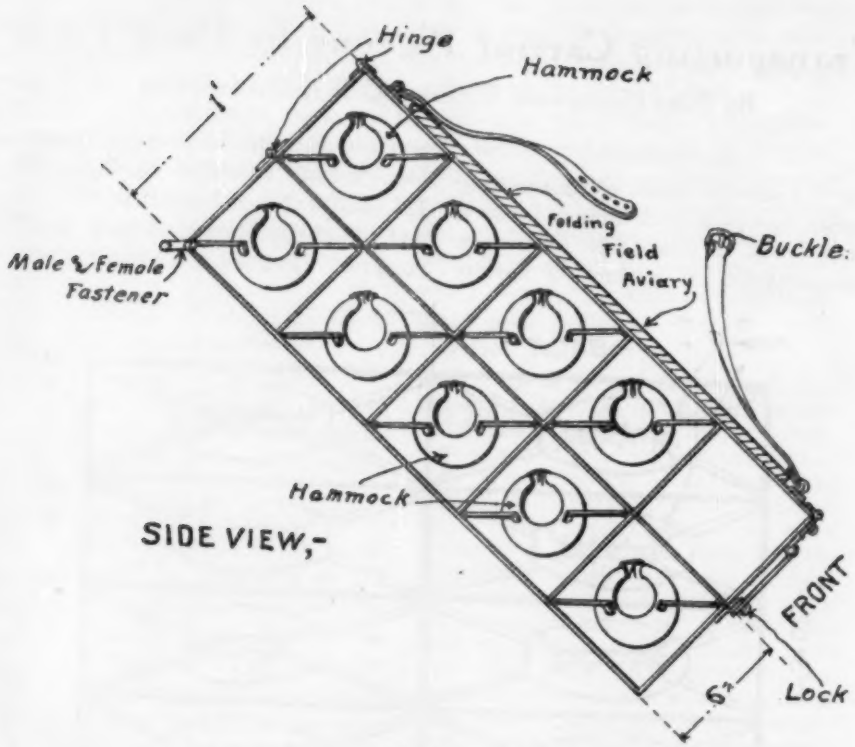


Fig. 2.

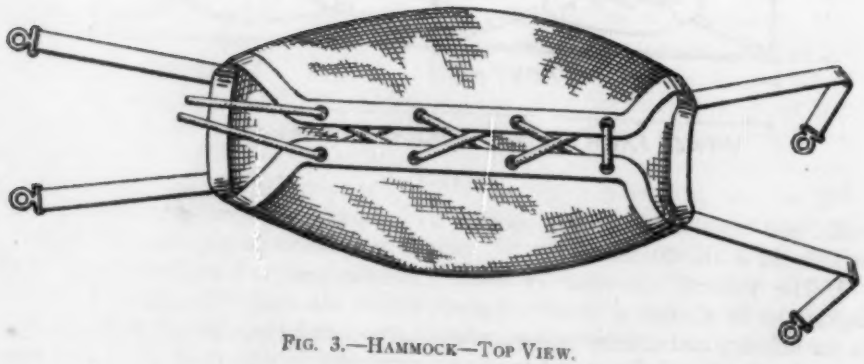


FIG. 3.—HAMMOCK—TOP VIEW.

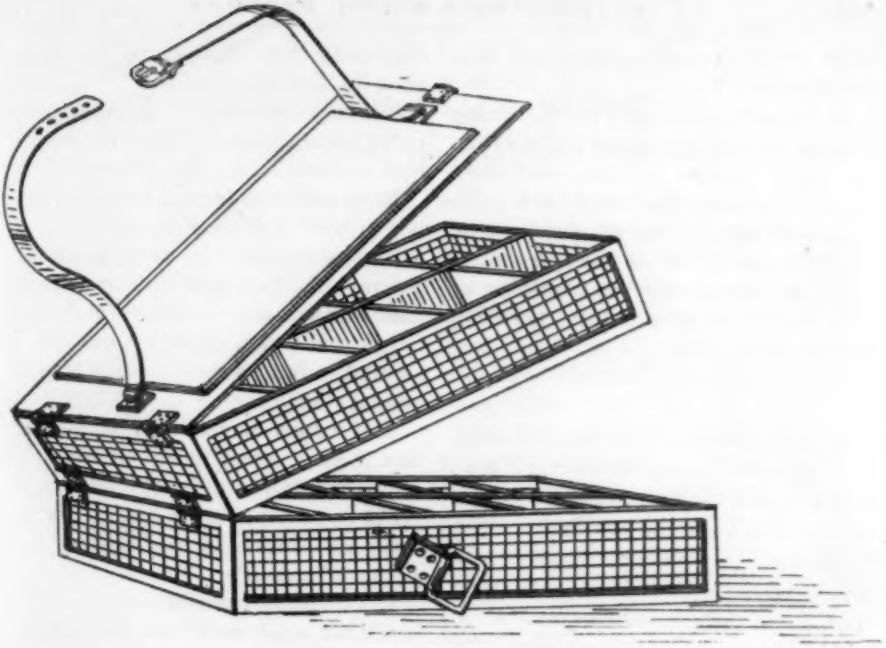


FIG. 4.—FOLDING FIELD AVIARY.

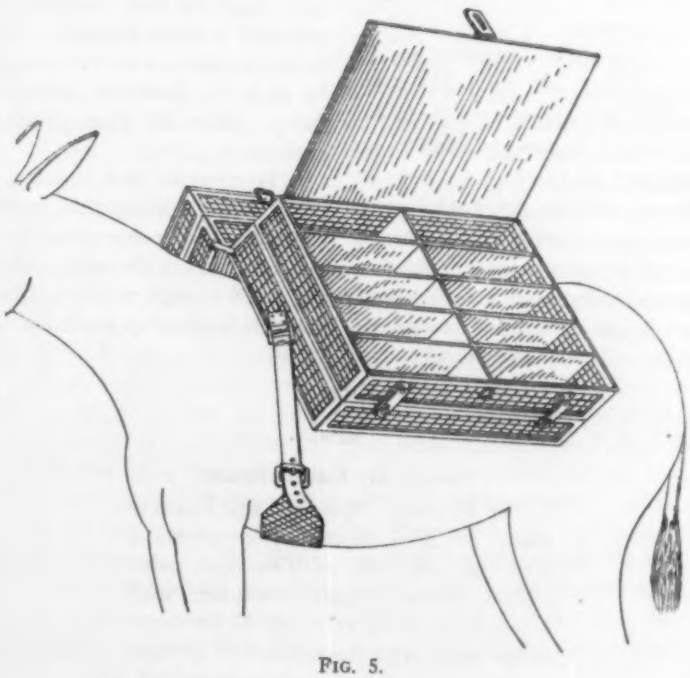


FIG. 5.

tents without removing the boxes from the animal.

3. These baskets must be: (*a*) strong enough to resist strain of adjustment, (*b*) large enough to carry sufficient birds to warrant the use of pack train instead of infantry and cavalry baskets, (*c*) light enough to be an appropriate load, (*d*) suitable for the breathing of the birds, (*e*) comfortable traveling for the birds.

THE SOLUTION

a. Steel framework and steel fittings.

b. Outside dimensions: 2′ 6″ × 3′ × 1′, to be packed on mule with 2′ 6″ edges vertical (see Figs. 1, 2 and 5).

Divided into two sections, upper and lower, joined with a hinge, and each section into two compartments: 2′ 6″ × 1′ 6″ × 6″ deep. Each compartment to be divided again into sub-compartments: 1′ 6″ × 6″ × 6″. Ten sub-compartments to section.

Each of the ten sub-compartments in the lower section and nine sub-compartments in the upper section to be provided with a hammock, similar to those now used by the Signal Corps in their infantry and cavalry basket; two front hammock supporters to be fastened to top edge of sub-compartment, two back hammock supporters to be fastened to lower corners of sub-compartment, so that hammock with bird is suspended diagonally (see Figs. 2 and 3). Capacity 19 birds per box.

One sub-compartment in upper section to contain small removable box for bird seed and food and message carriers.

Each section is to be a complete steel box in itself, 2′ 6″ × 3′ × 6″.

Bottom section contains diagonal fasteners for straps and on the bottom back corners the fasteners (male and female combined) by which one box is secured to box on opposite side of pack animal (Fig. 5).

Top section is cover for bottom section, fitting into hasps on edges of same (Fig. 4).

Cover of top section carries leather strap and buckle to hold folding field aviary (Fig. 4).

c. Two baskets carried on each animal would not weigh more than 100 pounds.

d. Material: sides, top, and bottom to be constructed of wire with mesh not more than ½ inch (similar to standard steel athletic lockers). Alternative material; sheet steel with circular holes ½ inch in diameter placed ½ inch apart. More air than present wicker baskets.

e. Hammocks with elastic supporters provide for comfortable traveling for the birds and secure them against jars and accidents of the road, and apertures are small enough to protect them from damage from stray branches on jungle trails.

Saving in Cargo Space

The Forestry Service of the Department of Agriculture, in cooperation with the University of Wisconsin, redesigned overseas shipping containers and boxes at a saving of about 25 per cent cargo space, and the number of broken packages was also materially decreased.

Principles of Teaching

By Lieutenant Colonel Elvid Hunt, General Staff, U. S. Army

ARE army officers good instructors? There is proof that they are. A few thousand of them have just performed the miracle of training an army of three million men under stress of a considerable time handicap, and in intervals of instructing they have found time to form the combat framework of a victorious war.

Officers of our Army had plenty of practice in preparation for working the training miracle of 1918. In 1904 you might have seen a certain captain personally directing, through his noncommissioned officers, the disciplinary training of the three squads which formed his company. He was putting into that training the utmost that he could bring to bear for attainment of definite results of high standard. Fourteen years later, this same man, now a brigadier, exerted that same brand of pressure in directing the training of victorious divisions. He was practicing in 1904.

In 1906 a certain major appeared to be over-imaginative when, at maneuvers, he expanded a slim battalion into an outlined brigade for the purpose of instructing his captains in the visualization of their possible duties in directing the combat deployments and advances of regiments. As a matter of fact, that major is now a general officer of high rank, and several of the captains received their opportunity during the war and made the most of it.

The routine training of the little companies which so frequently changed —the garrison schools, the maneuvers, the army schools, the instruction duty with the colleges and with the militia, the school of service on the Mexican border—all these were developing army officers for the great instruction work of 1917–1918. That they did it with so great success is a tribute to the conscientious days and years they spent in preparation.

Not long ago there came to my attention an officer training schedule which a casual glance was about to tell me contained the usual familiar items. My eye was caught, however, by something different. The hold-up item was the phrase, "Principles of Teaching." I was at once interested, because, like most army officers, I had been attempting to teach during most of my service. Furthermore, I realized that teaching would fill a considerable portion of an officer's time for at least the next few years. I have found it expedient to take the time to look up some of the aforesaid Principles of Teaching. The following discussion may be of interest to those who desire to apply the measure of basic teaching principles to the things they did to those companies of enlisted men—those noncommissioned officers who became officers, those militia men who helped win the war, those reserve officers who passed on what was taught them, and to all others who had come under their instruction.

A study of some of the best-known authorities on pedagogy, and an attempt to reconstruct in my own mind the methods of procedure on the part of those military instructors whom I had always felt to be the best of teachers, led me to certain conclusions. These

fell naturally into two great divisions which, approximately speaking, seemed to constitute the subject-matter of two great problems which confront every instructor. These rise up to face alike the primary school teacher and the college professor. They confront the military instructor whatever his rank, whether he is teaching military theory in a classroom or methods of attack upon machine-gun nests in a training area just behind the firing line. Moreover, these two problems are of equal importance, a fact lost sight of by many men having training work in hand. Briefly stated, they are:

1. What results are desired?
2. How can the desired results be best obtained?

The first of these, curiously enough, is the one most often left in obscurity. Every instructor has a vague notion of what he is after, but, too often, he lacks a definite conception of what the desired results really are. Frequently, during his instruction, he fails to keep fixedly in his mind a definite goal at which he is aiming. As a result, he not seldom leaves, on the minds of those he is teaching, an impression of wandering and of ineffectiveness.

In the training of a soldier, there are certain definite things we want him to know and to be able to do according to a certain standard of proficiency. In training a squad or a battalion, or a larger unit, the end to be obtained is the performance by that unit of certain movements, under certain conditions, in such a manner as to satisfy a mental picture of perfection of training. The training cannot be very effective if it is not known of what the desired results consist. Who is going to tell us? For instance, tomorrow morning's schedule says "close order drill—one hour." What is the result desired at the end of that hour? The schedule doesn't seem to tell. It merely says, put in one hour of close order drill. Too often that is exactly what happens! We "put in time" without a definite vision of what should be accomplished during the period. Just as any workman has before him the model he is to copy, and constantly compares each day's progress with the final result required, so must the military instructor have in his mind the end toward which he is working, and count the day lost in which he fails to add some concrete part to his work which will bring it nearer to the big result toward which he is striving. Incidentally, it would seem reasonable that he should record the day's progress.

There should be certain specifications written out and available for study and reference. Ideally, these should be fortified by "sealed patterns in the office of the Quartermaster General." Such an ideal being impracticable, the nearest we can come, probably, to the "sealed patterns" are those standards set at the U. S. Military Academy and at various training centers and laboratories. These standards, furthermore, should be promulgated by means of repeated demonstrations by those competent to demonstrate and by repeated exhibitions of authorized and carefully prepared moving-picture films.

I hope that out of the war there will develop a great infantry training center, and, in that corner where is located its training laboratory, expert infantrymen will constantly be at work upon problems connected with the practical development, improvement, statement and promulgation of infantry specifications, standards and training methods. I also hope that out of this training laboratory in the infantry training cen-

ter there will come two authoritative infantry manuals in addition to the Drill Regulations, namely, *Infantry Training Specifications* and *Infantry Training Management and Methods*.

The instructor, having met and solved the first problem—that is, having fixed vividly and securely before his eyes the final result that he desires to obtain—is then ready to consider his second problem: How can the desired results be best obtained? This problem is essentially one of teaching—of pedagogy, if you please—and the books on pedagogy inform us, in beginning the consideration of the teacher's problem, of how to get the result, that *pedagogy is in reality not the process of putting something into another's mind but the process of leading out of another what he knows, and then furnishing such material as may enable him to correlate and add to his own knowledge.*

It becomes necessary, therefore, to *determine the mental caliber of your hearers and frame your work in such a manner as to appeal to the one least able to understand. What you give must reach every man and go over the heads of none.* Otherwise you fail. We all know how true these principles of teaching are in military instruction. To the minds of all of us come amusing incidents connected with the military instructor who failed to recognize the above principles in instructing some of the types of men who used to arrive in the recruit crowds. The only verbal evidence of good instruction in guard orders that could be obtained from one reliable sentinel of foreign birth when he was asked the familiar question, "What are your orders?" was, "My orders bin—this bin my post—it extend from one end to de oder—I don't let any feller get away with anyting round here." Whoever taught him his orders evidently had to depart from the words of the text and suit the training to the language and ideas with which he was familiar.

The military realm is a very strange land to the average recruit, and he is much bewildered by the new ideas that are thrown at him. If the instructor wishes to do a friendly act or to speed up the training a bit, he will constantly try to connect the military teaching with the probable experiences and knowledge of the man before he came into the service. His skill in doing this will in part measure his ability as a teacher. First, he will "take stock" and preferably card index a few pertinent facts about his men under such headings as: "From What Section of the U. S."; "Trade"; "Years of Schooling"; "Knowledge of English"—and others which may suggest themselves as important. Next he will prepare the presentation of his work in such a manner that he is sure it will catch those below the average in aptness. He will bring every necessary trick and skillful means of instruction into use. He will use simple illustration and vivid demonstration whenever possible. He will segregate the seemingly impossible men at an early stage and study their defects, endeavoring to devise means of overcoming their difficulties.

The chief violation of the principles just stated consists in talking over the heads of the men. To really get your words into the minds of the men to whom you are talking is not an easy matter. Sometimes the difficulty lies in the use of book or text words and phrases. This comes about because of a very natural tendency to commit phrases to memory and to repeat them word for word in training. The language which will be most readily under-

stood by men of very little schooling need not be slang but should be very simple and plain, connected as far as possible with the vernacular with which he is most familiar. It will often be advisable to repeat the same thing many times in different forms until you are perfectly sure it cannot be misunderstood.

The next principle which the teacher must observe is this: *Obtain attention and keep it. This is not easy, and failure rests with the instructor and not with the group to be instructed.* To do this successfully there are four things which must be borne in mind:

1. *Your subject matter must be at your tongue's end—so definitely and so simply outlined that you cannot fail to present the subject in such a manner that it makes a picture in the mind of the hearer.*

2. *Your subject must be skeletonized. Every purposeless idea must be eliminated. At the end of every teaching session, the hearers must be able to reconstruct, point by point, what you have tried to give them. Only important ideas, and those in their proper sequence, must be presented.*

3. *Points may often be enforced by the use of apt illustration, but such illustration must be employed sparingly and then with great aptness.* Having regulated your presentation of a subject to the minds of the least able and having gained and kept attention; in short, having, in so far as you are able to judge, given successful instruction in a definite subject, your next step is:

4. *Repeat that instruction, for in repetition lies success. Be sure that each step of your instruction is understood and that your hearers are able to arrange the steps into a correlated whole. Invite questions and furnish explanations, but be very careful never to impress the difficulties of any subject on the minds of your hearers. Explanations must always be from the simplest up, not from the hardest down.*

The above-mentioned principle of teaching, namely, "Obtain attention and keep it," is an important one for the consideration of the military instructor if he proposes to "put over" his instruction. He must go further than to merely command "attention." Unless he does, there will be the same uncertainty as to the success of his instruction as there was in the mind of the recruit on the target range, who, when asked by his lieutenant: "Where do you think your shots are going?" replied, "All I know, Sir, is that they are leaving here."

The military instructor must get the desired result by means of the careful application of the principles of teaching. The very first thing necessary to make the company pay attention seems to be to make *all* the members hear. It won't do to stand up close to the middle of the company and talk only loud enough for the three middle squads to hear, if you have any desire to get the attention of the flank squads. You must carefully select what you judge to be the proper focusing distance from the extremities of the group, take your position at this point, and then talk distinctly and loudly enough to preclude any possibility of anyone having to make any effort to hear. Let the men be comfortable, if you want to really instruct them. Think about your arrangement of the men, in order that you may lose no instruction advantage because of a poor formation. Frequently put yourself, in imagination, in your hearer's place. That will be found to be one of the most valuable of aids in any and all forms of instruction.

It must constantly be borne in mind, too, that little things count. The pitch of a voice, the careless dress of an instructor, harsh or unjust criticism, frequently make non-effective much really good instruction.

The voice should be made to do its work easily, not shrilly; enunciation must not be rapid, but, likewise, it must not be hesitating. The monotone of the average reader must be steadily avoided. The gospel of careful dress is very important. It applies especially in the army, where uniformity of clothes makes any deviation most noticeable.

The matter of having subject-matter at the end of one's tongue and the subject skeletonized is merely a question of preparation:

1. *General preparation*, which is the result of long study, practice, and experience. From this is derived *authority*, and unless you *are* an authority and can speak with authority, you are merely an emergency substitute for the real instructor. The hearers know it, the substitute knows it, and the group is held together only by military rules.

2. *Particular preparation* for the day. Even the greatest authority spends much time thinking his way through the steps of the instruction work of *each day* if he expects to make a success of it.

The instructor must take pride in the successful accomplishment of any piece of instruction work. He must plan for it and carry it through with all the thought and care he would bestow upon a great task.

The matter of using illustration in driving home points requires some discretion, lest at the end of an instruction period your hearers have in their minds a collection of stories merely, the points being entirely obliterated. An audience likes a story, and a good story-teller is always popular, but the popularity of a teacher is in no sense a measure of his efficiency in obtaining real instruction results.

The military instructor knows that he *must repeat* if he wishes to drive home his points. The civilian teacher recognizes this fact and says some very interesting things with reference to it. A certain professor, gray with experience, was heard to say in discussing this phase of teaching: "After you have repeated and repeated until you are tired of repeating, a measure of success is yours if someone suddenly asks: 'What was that you were talking about a little while ago?'" Someone else not quite so pessimistic said: "The first time you go over the subject, your hearers learn that there is such a subject, the second time they hear the points, and the third time they *may* begin to comprehend."

Useful teaching must go further than merely driving home points. It must enable those taught to make application of what they have learned. This is especially so in military instruction. Suppose, for example, we are teaching some of the principles of troop leading and all the points have been thoroughly instilled into the minds of the embryo officers. Suppose, furthermore, that they have satisfactorily responded to our examinations or quizzing—it doesn't follow that they can lead troops in a situation involving the principles taught. Before we can know that they are able to do that, they must *practice* under our direction and observation.

All the foregoing, the work of obtaining attention and the work of driving home points, advances the work of completed training only about one-tenth. The other nine-tenths consist of the practical application of all that

has gone before; and this must be done largely by the individual efforts of the hearers themselves. Authorities on principles of teaching say as follows; "At this point the work of the instructor becomes that of a supervisor." It is now his duty to see that each man has assimilated what has been given him and can, in turn, measure up to that standard with which the instructor started as his basis of instruction. Undoubtedly, there will be times when the instructor will be somewhat appailed by a mass of glaring failures. Where this occurs it merely means that *somewhere* the instructor has failed to make clear and drive home some particularly essential point. The errors must be corrected and the incident borne in mind for future instruction. Occasionally, but very seldom, there will be some few sporadic cases of apparently gross ignorance which seem to defy all efforts. These will probably be traced, on expert examination, to some physical or, possibly, mental defect so obscure in origin that it has escaped the notice of the medical examiner. Where that occurs, the few cases should be removed and placed under special instruction or given further medical attention to determine their fitness, physical or mental, as the case may be. For the most part, success lies almost entirely in the clearness, conciseness, and definiteness of the instructor, and with him lies the responsibility.

The essential elements of good teaching when this stage of supervision has been reached are:

1. Constructive criticism. Criticism should always be given, but never indulged in unless a remedy is at once forthcoming. Constructive criticism is the very basis of good supervision. When there is criticism to be made, care must be taken to find out what caused the error criticized, and a method of remedying the fault must be at once applied or the force of the criticism is lost and becomes non-effective.

2. Stimulation of effort. To further interest in results and to stimulate a healthy rivalry in obtaining approximate perfection, a concrete method of measuring results will be found most helpful. Simple means of making tests and of vividly recording them must be found. Attention is invited to the success in stimulating effort of the large progress clocks, thermometers, and other graphic representations used in financial and similar drives to obtain a result. Apply the same psychology in obtaining instruction results, and training progress will be very rapid.

The work of military supervision of training is an art which, applied with success, involves not only knowledge of the essential principles of supervision, but also knowledge gained by experience in the many detached means of making such principles effective. Especially it involves tact and constant keenness and thought. Personality is also a great factor in military supervision. The successful supervisor of military training must have the essential personal factors of enthusiasm and unrelenting determination which he knows how to apply with just enough lightness as not to permit those under his supervision to know that it is being applied. He must also know the science of management of military supervision; how best to organize ten men or a hundred or ten thousand for such supervision as will most surely get the desired training results.

There are artificial methods carefully worked out, doubtless, by individuals of

instructing and supervising in each and every military subject. It is unfortunate that these methods have never been collected, sorted, arranged and labeled in such a manner as to make the material available to everyone, more as points of departure than as servile copies. This work should be undertaken in the training laboratory located in a corner of the infantry training center. There should also be conducted, at the same place, normal classes for instruction in the principles of teaching and methods of infantry training, with a view to training junior infantry officers in such a manner that the greatest number of instructors can become efficient with a minimum of failures. It is a waste of time and money to let each man experiment on others for his own development. The essentials of normal training are not difficult to master, and any camp or school where they can be taught simply and effectively will be a long step forward in the eventual development of a standardized infantry from the standpoint of time saved, efficient instruction given, and results obtained.

Patience Is a Virtue—Preparedness a Necessity

At the meeting of the Council of Three on the historic afternoon of June 23, 1919, Premier Clemenceau opened the fateful dispatch announcing that Germany would sign the peace treaty and exclaimed:

We have waited forty-nine years for this moment! For forty-nine years the mailed fist of the *reitre* (German trooper) who have governed Germany has menaced the world. Whether the man's name was Bismarck or William II it was still the same *reitre* of the middle ages, surrounded by soldiery and drunk with pride. Be careful; keep your powder dry! Be careful! Remind the world that it is living on a barrel of that powder. This *reitre's* dogma was that might is right, that a state's only obligation is its own interest, that treaties do not exist when they clash with the interest of a state, and get rich by any means. We know from witnesses who were at the side of William II that, when he learned of the Sarajevo tragedy, he who posed as a keeper of the peace cried: "The hour has struck. Now we shall see what an army is!"

Duties of the Administrative Staff and the Issue of Administrative Instructions[1]

THE Administrative Staff of the British Service differs from that of the United States in so much that it is not an integral portion of the General Staff and has two branches, viz., the Adjutant General (A) and Quartermaster General (Q) Staffs. In practice, however, these latter work in very close touch in formations, both being represented by the Senior Administrative Staff Officer of an Army, Corps or Division. It may be noted that in each of these formations the Senior General Staff and Senior Administrative Staff Officers are of the same rank and grading.

In close touch with the Administrative Staff are the Directorates or Services, who, except on technical matters in their own branch, deal with and receive instructions from the Administrative branch. In the U. S. Service the G1 branch of a formation does most of the Staff work of the British (A) and (Q) Staffs, except such as is done by the Adjutants and Quartermasters of Divisions. It works, however, under the Chief of Staff of the formation, an appointment which does not exist in the British Organization.

The duties of the Administrative Staff of a Corps and Division are shown in Lecture 14, 1st Course, also a tentative allotment amongst officers in the sections concerned. This was issued chiefly to show students how many subjects need consideration. The duty of the Administrative Staff may briefly be said to be to ensure the smooth working of all the business portion of the military machine, and to take as much detail work as possible off the shoulders of the commander of the formation and the Operations Staff, who are primarily concerned in fighting the enemy or arranging to do so. The work involved is unending and needs patience, accuracy, and great attention to detail; in the higher formations considerable military knowledge is necessary owing to the very varying subjects dealt with.

It can easily be seen that unless a very close and real liaison exists between the Operations and Administrative Staff, disaster must eventually follow. This cannot be preached too much or rubbed in enough into Junior Staff Officers. It must also be understood that the Operations branch must lay down matters of policy in all cases, consulting the Administrative Staff when necessary.

Directors of the various services, *i. e.*, Supply of Food, Ordnance, Medical, Remounts, Veterinary, Postal, Labor and Transportation, have a dual responsibility—namely, to their Directorate at G. H. Q. for the technical and special duties of their branch, and to the commander of the formation to which they belong for carrying out his orders to the best of their ability. The Administrative Staff should keep in close touch with their Directorates, keep them up to their work and obtain technical advice and reports from them regarding the service they are responsible for.

Under modern conditions, Transportation plays a very large part in war, and the Administrative Staff has much

[1] As given out at the Army General Staff College, A. E. F.

work to do in close cooperation with the Transportation Directorate, which in the British Service deals with Railways, Light Railways, and Roads. It is essential that the G1 Sections of Armies and Corps should work in very close liaison with the Transportation representative attached to their formation; this especially applies to periods of preparation for offensive operations and to the arrangement of rail movements during active operations.

It will be observed that actually in the larger formations the Administrative Branch coordinates the work of the various Directorates, which in turn carry out all the detailed work of their services.

Speaking generally, the following points are essential to successful work on the Administrative Staff of any formation:

a. The welfare of the troops, and promptitude in the provision of supply of all kinds are of first importance.

b. Lower formations must be visited, and looked after.

c. Personal inspections are essential, especially in forward areas.

d. The word "can" is better than "can't." At any rate an effort can be made to meet demands.

e. Occasional meetings with Directors and Junior Staffs are essential, saving time and paper.

f. Work must be decentralized, and subordinates trusted.

g. Thoroughness, tidiness, and attention to detail are absolutely necessary in the office.

h. "Operations" and "Administration" must work together.

To the above remarks one may safely add those small points which affect all Staff Officers of any branch, namely:

Do things and don't *talk about them*.

Help, don't *obstruct*.

Think of the troops—safeguard their interests.

The object of issuing the "Administrative Instructions" notes is to point out how every detail must be gone into by the G1 branch of a Division, for example, when arranging a move.

The issue of such instructions is most useful to all concerned and saves endless telephoning and letter-writing.

Are You Proud of the Infantry?

If so, then show it. Work for it. Talk for it. Write for it. You know what the Infantry has done in this war and all other wars. If this does not satisfy you and make you an active booster for your Infantry, then by all means transfer to another arm of the service at the first opportunity where you will be an active supporter of that arm and therefore of the Army. The Infantry desires only officers who are real, active, militant Infantry men, first, last, and all the time.

German Theories in Attack and Defense[1]

By Colonel Sir T. Cuninghame

IN THE early part of the year the lessons which were to be derived from German documents referring to current fighting dealt solely with the aspect of attack. More lately, owing to the allied successes, the Germans have had to consider also modifications in methods of defensive action.

In this lecture an attempt is made to assess the position arrived at in the opinion, as between the expedients open to attackers and defenders, in the form of battle which we have in the future to expect.

We have to notice a sequence of great struggles in the year 1918 waged under conditions more or less similar, but productive of results remarkably different. In Artois, Flanders, and in the first phases of the recent battle of the Marne we notice overwhelming German attacks, which achieved successes comparatively great. In Champagne, east of Rheims, we have seen an identical attack brought to ruin by the application of novel expedients in defense. South of Soissons we see an allied effort of the same nature, partially successful only, and finally in this connection, at Villers Bretonneux, we recognize a great allied success.

The reasons for success, partial success, partial failure, and complete failure require diagnosis.

We have to deal first with the factor of "Surprise." In the German attacks in March and April there was no "surprise" as far as the timing and location of the attacks made are concerned. Such surprise as was effected concerns the method of attack undertaken and the fact that the dispositions for defense adopted by the British were not suitable to cope with them. The success of the Germans is therefore to be attributed to causes other than surprise, including those relating to organization, and method of defense.

In the German attack east of Rheims, the surprise was effected by the defense, not by the attack. The point of assault, and even its date and hour, had been discovered beforehand, and, important as are the novel methods of defensive action applied on this occasion, the principal cause of success is to be attributed to "surprise."

In the case of the allied attack south of Soissons there was no surprise, and the results in consequence did not attain the dimensions hoped for.

At Villers Bretonneux complete surprise was effected and the success attained was proportionate.

We are interested, then, in the question whether surprise in the future can be expected. The Allies have a great advantage in their superior air service, for much naturally in the way of reporting preparations for attack is to be expected from air reconnaissance. No doubt the Germans will devote more attention to this important service by local concentrations of air craft at suspected points. If surprise is to be effected, all preparation in forward and rear zones must be concealed from the air. This may be comparatively easy in minor enterprises but is exceptionally difficult in combats on a large scale.

[1] A lecture given at the Army General Staff College, A. E. F.

If we take the example of Villers Bretonneux, we find the concentration of 12 infantry divisions, 2 cavalry divisions, 400 tanks and 2,000 guns completely hidden by various devices. This involves no more than a local enterprise with a frontage of 20 kilometers and with an objective strictly limited. Its results were highly important, all the same, and as the forces engaged were respectably large, it is profitable to take a note of the methods of concealment adopted.[2]

They were very complete and wholly successful, and what we have to ask ourselves is whether we would have got notice of this concentration if the conditions had been reversed. If there is any doubt in the matter, then we shall have to conclude that assault without notice is possible in spite of all precautions and must turn to other means whereby the defending side can protect itself from the dangers inherent in it.

The possibility of effecting surprise depends in a great measure upon the necessity or otherwise of a preliminary bombardment. However short the bombardment, its disadvantage is that it gives time for the manning of defenses.

At the battle of Villers Bretonneux the British dispensed entirely with preliminary bombardment, because they had tanks. The French, who initially had no tanks, found it necessary to have forty minutes preliminary bombardment.

We have traced in previous lectures the process of expedient and counter expedient in attack and defense, and always we see that the factor of local artillery superiority dominates the issue.

The first answer of the defense to heavy concentration of artillery upon defended lines was a partial withdrawal of the artillery of the defense, not so far back, however, as to abandon the defense of the outpost zone. In this intervening epoch, the defense of the outpost zone, by the combined action of infantry garrisons and artillery covering fire, was deemed essential to general safety, and as a result the zone was protected by obstacles and by works. The defensive arrangements permitted also a scheme of protective barrage along the forward edge of the outpost zone.

The reply of the attack to this form of defense was the complete obliteration of the trenches and obstacles of the outpost system, by the destructive fire of concentrated mortars, the artillery of the attack being used not only to neutralize the artillery of the defense by gas and high explosive bombardment, but also to cover the advance of infantry trained to mobile action, up to, and over, the gun line of the defense. For the obliteration of the first parallels of the outpost zone a preliminary bombardment was necessary.

This in turn was countered by further withdrawal of the gun line of the defending artillery, which abandoned all serious endeavor to prevent the entry of the enemy into the outer fringes of the outpost system, by the use of protective barrages, and substituted an organized scheme of interdependent action between the infantry garrisons of the outpost system and the covering artillery whereby the enemy was shepherded into barraged zones and kept continually under observed fire. Neutralization of the artillery of the defense was secured by concealment, dispersion, and change of position.

[2] The principal precautions taken were given verbally, but it is not desirable that they should be included in the issued copy of the lecture.

At Villers Bretonneux, neutralization of the defending artillery was provided for in the attack by area barrages of heavy artillery, directed upon suspected localities, in the hope of catching unregistered batteries, and this was to a great extent successful.

This is, then, what we have arrived at today. In defense, an outpost system of varying depth, lightly garrisoned, in front of a position of resistance heavily garrisoned, with a defending artillery standing back generally from 5,000 to 7,000 yards behind the front line held.

How is such a position to be attacked?

The problem will differ according to the nature of the defensive organization encountered, and the depth of the interval between them, and allowing that the outpost system will be, to some extent at any rate, defended by trenches and obstacles, the attack has to anticipate three successive tasks.

1. Passage of the first obstacles.

2. Advance up to the position of resistance.

3. Overcoming the position of resistance.

The first obstacles must be dealt with by tanks under cover of rolling barrage, or by preliminary bombardment. Tanks can be collected in secret and used to cross defended zones which have not been previously pulverized by trench mortars.

Similarly, tanks can be used to support the advance of the infantry beyond the first obstacles, up to the full range of the field batteries of the attack, that is, up to the limit of the rolling barrage but not further.

If tanks are not available, the intermediate zone (called by the French the Hinterland) must be traversed after the preliminary bombardment by the methods of "Fire and Movement" which we have studied in previous lectures, and of which the Germans made use in the battles in Artois and Flanders.

But whether the initial leap is made with or without a preliminary bombardment, or with or without the assistance of tanks, it may be conducted into a zone altogether abandoned, and the depth to which the abandoned portion of the outpost system may extend, as well as the depth and method of defense of the rest of that zone, may be wholly unknown to the attack in spite of all reconnaissance.

If we are to assume that, as a general rule in the future, assaults will be made with the assistance of tanks, it is reasonable to assume that the zone abandoned by the defense may extend as deep as the reach of the rolling barrage which protects the tanks. But it must be remembered that, on the one hand, at present the number of tanks is limited, and on the other that anti-tank measures, especially of the nature of land mines, are in their infancy and much more soon will be heard of them.

However this may be, the conduct of the attack in the intermediate zone must be governed by the nature of the defense encountered. We have grown used to the idea of rigid forms of defense based upon lines of trenches or lines of defended localities. The depth of the outpost zone is indicated by the presence of such defenses, as are also the limits of the battle zone. But it is possible to conceive that in the future the method of defense may be made much more flexible in character, dispensing with fixed zones, or at least with their outward indications, the object being to induce the attack to blunder, to expend their energies pre-

maturely and to arrive in the real battle zone of the defense unsupported by a sufficient artillery and faced by the fresh troops and unsubdued artillery of the main defending force.

For neutralization of the artillery of the defense, the use of long-range attacking guns cannot be relied on normally as an effective device, if the artillery of the defense is much withdrawn, considerably dispersed, or assisted by groups maintained initially in reserve.

Nor will it be easy for the attack to push forward a sufficient number of guns and a sufficient amount of ammunition if the advance is rapid. The task of the attack is herein made difficult. Precipitate action may be highly dangerous, as was conclusively proved in the battle east of Rheims. For though the artillery of the defense is to attack the first and principal target, the removal of which is a necessity, it is not the only or even the principal danger. It is the infantry of the defense in cooperation with the artillery of the defense, when the latter has by the development of events attained local superiority, that is the danger. The principle of the newer defenses may be wholly a principle of maneuver, irrespective of cession of ground, and cession of ground may run to considerable limits.

Herein the Germans have a certain advantage over the Allies since the former can, without any sentimental or moral disadvantage, abandon such tracks as they please in order to gain full advantage from flexible methods of defense, culminating in counter-attacks upon the troops of the attack when deeply committed, a scheme whose first necessity is adequate depth in front of the true zone of resistance.

How is the attack to overcome this difficulty?

Looking at the question more closely from the point of view of the defense, not only is the depth of the maneuver zone a quantity that can be varied at will, but also scope exists for an exact mutual program between the infantry and the artillery, provided that both are sufficiently withdrawn to escape the dangers of initial surprise. The artillery of the defense cannot hope to equal the artillery of the attack in numerical strength unless the point and time of attack are discovered in sufficient time for counter preparation. Normally it will be weaker, and, as stated above, must escape neutralization and destruction by concealment, change of position, and maintenance of reserves.

There is obvious scope for ringing the changes in the method of defense, the principle being to deceive the enemy from first to last, to induce him to expend his strength prematurely and to break up the cohesion of the attack by local action. Such action may vary in nature from resistance by stationary and isolated groups to rear guard encounters in the open, conducted on the principles laid down in Field Service Regulations. As many devices are open to the defense as are open to the attack, but always three principles will govern the general conduct:

1. Maintenance intact of the majority of the artillery.

2. Cooperation of infantry and artillery with a view to annihilating fire.

3. Maneuver for occasion for successful counter-attack.

German thought is proceeding along these lines, and if, as seems likely, the initiative from now on is to pass into our hands, it is important to study their views with attention.

They attribute our recent successes to the fact that their own forward defense was too dense and the depth of their outpost zone insufficient. After drawing attention to the necessity of reconnaissance, they lay down that the depth of the outpost zone must bear a relation to the conditions of the defense and the artillery strength. The weaker the artillery, or the more incomplete the defense, the deeper should be the outpost zone. From 550 to 1,100 yards is at present mentioned as a full depth, but no doubt they will not stop there. According to them the garrisons of the outpost zone do not require a deep formation, simply patrols, petit posts and local counter-attacking groups, the real distribution in depth of the troops allotted to the battle zone, beginning at the main line of resistance and extending backward from it.

The outpost line is to be supported by fire from the main line of resistance. Rifles, light and heavy machine guns, trench mortars and batteries must be definitely allotted for this purpose. In addition, assault detachments can be sent forward from the main line of resistance.

It is then possible to carry on an active outpost warfare of minor enterprises. Annihilating fire from artillery must take the place of zonal barrages, the artillery of the defense being flexibly handled.

In an attack with systematic artillery preparation, fighting for the outpost zone must be refused. The zone must be abandoned. Later on, perhaps, a new main line of resistance may have to be fixed, should the annihilating fire of the defense not prevent the enemy from establishing himself in the outpost system. If there is any doubt as to the nature of the enemy's attack, and as to whether the garrisons of the outpost system should be withdrawn or not, the decision should be to withdraw them. It is always better to accept this than to incur losses by an unnecessary defense of the outpost system.

This declaration, issued by Ludendorf on the 12th of this month, is obviously of immense importance, and the conduct of the attack against an enemy who is prepared to undertake such methods in defense required close consideration.

We have first to notice the point made that "*the forward defense was too dense and the depth of the outpost system insufficient.*"

By a change in such disposition, two advantages are to be secured. Firstly, the obvious advantage of escaping the destructive effect of any preliminary bombardment or inroad of tanks, and secondly and more important, escape from over rigidity in the character of the defense, which prevents the garrisons from breaking up and disorganizing an attacking force by means of "a fight of fire and movement," involving local counter-attacks and disputes for the possession of prepared localities.

In the event of an attack on a large scale with artillery preparation, the German higher command apparently contemplates the complete abandonment of the outpost zone without fighting for it, relying entirely upon the effect of the fire previously arranged to fall upon it to prevent the enemy from occupying it.

Next to notice is the principle that the weaker the artillery, or the more incomplete the defense, the deeper should be the outpost zone.

Finally there is the following to be observed:

The range of the field artillery of the attack should govern the ability of all arms of the defense to maintain fire upon the abandoned outpost zone.

The field artillery of the attack can normally reach to within 4,000 yards of the hostile position. If standing barrages are placed upon the resisting garrisons of defended localities or lines within this limit, counter-fire action by their garrisons should be impossible. The artillery may be disposed as far back as 8,000 yards behind the zone upon which the calculated barrage or annihilating fire is to be brought, that is to say, possibly 11,000 yards from the counter battery artillery of the attack. Will the artillery of the attack in that event be able to neutralize it? Probably not, and in that case the attack must calculate on having to pass through a barraged zone.

On the other hand, the comparative absence of counter battery artillery by the defense will allow the long-range artillery of the attack to turn effectively and unmolested upon the line of resistance of the defense, unless that line is sited beyond their range, or unless it is too indefinitely indicated for exact registration.

If the line of resistance of the defense is within range of the artillery of the attack, the attacking side can either pass through the hostile defending barrage and assault the line of resistance under cover of their own artillery fire, or occupy the outpost system only and maintain the bombardment on the hostile line of resistance.

If, however, the line of resistance of the defense is beyond the reach of the artillery of the attack, the whole force must move nearer to it before assault.

The weight of the artillery of the defense that is capable of being brought to bear will settle the best course to pursue. If little artillery is developed, the enterprise can be pressed; if much, there will certainly be the maximum of slaughter for the minimum of eventual result.

This also is in accord with German principles of attack, wherein it is laid down that unwise persistence in the face of great loss is a mistake.

What this amounts to is that there may have to be preliminary attacks, restricted in depth to that which is necessary for the occupation of the outpost system, followed by later assaults upon the line of resistance. Such a method will, however, fail to secure surprise in its decisive stages unless carried out simultaneously upon a wide front, or upon several fronts simultaneously.

Even then it is possible that during the pause which will be necessary between the attacks upon the outpost system and the attacks upon the position of resistance, the enemy may fall back to a third position in rear, avoiding again the danger of "surprise" assault and disorganizing afresh the process of attack.

However, successive withdrawals of this nature cannot be indefinitely continued even by the Germans, and there will be localities whose retention is so important that they cannot be abandoned voluntarily at all.

This much in any case transpires, that both in attack and defense the mode and development of combat is likely to vary locally, and the Germans therefore rightly insist that it shall be fought according to its development after the initial break through is secured —and not as a set piece. This involves high tactical skill on the part of local commanders as well as a high standard of training on the part of both troops and staff, so that the force employed may respond, without disorganization or difficulty, to the directions of the commander as the battle from time to time changes its character.

Indoor Auxiliary Aiming Mark Instruction

By Captain Charles L. Gilman, Infantry

"EMPLOYING an auxiliary aiming mark is aiming at one thing and hitting another—on purpose."

The kick of this definition, furnished by an officer of the 88th Division, lies in the two last words. All of us have performed this feat, inadvertently. On those occasions somebody, in the pit, applauded by waving a red flag.

Compliance with Paragraph 247, I. D. R., however, implies a certain amount of premeditation. This paragraph informs us that: "If the target cannot be seen with the naked eye, platoon leaders select an object in front or behind it, designate this as an aiming target, and direct a sight setting which will carry the cone of fire into the target."

This is not a discussion of the theory of aiming off to hit or of the practice of employing the various inverted sight scale devices to determine the required sight-setting. This knowledge may be acquired by careful study of "Musketry," Chapter IX, where the subject is fully covered.

What follows deals with the result of a series of efforts to arrive at a quick and certain method of teaching this subject which resulted in the evolution of a system of instruction which proved successful with a succession of classes made up of officers of all the various degrees of preliminary training found in the service during the emergency.

We, three hard-worked assistants and myself, encountered the task of teaching class after class of hard-driven officers auxiliary aiming mark work in the Automatic Rifle School of the 88th Division, at Camp Dodge, Iowa, during the winter of 1917-18.

Time was limited. This, with severe winter weather and meager range facilities, precluded giving individual outdoor firing practice. The difficulty with which the average student visualized the subject from text and diagrams rendered the necessity for practical demonstration imperative. The solution was sought—and found—in subcaliber, indoor firing.

When we had worked out an efficient indoor equipment we found that we could use it not only to illustrate the theory and give practice in auxiliary aiming mark work but also to demonstrate the various distributions of automatic rifle fire, night firing, by means of the night-firing box, searching to correct range and adjustment of fire by observation, and to combine with these practice in giving target designations and fire orders.

This equipment consisted of a subcaliber automatic rifle, a backstop, landscape targets, miniature night-firing box and such necessary accessories as musketry rules, graticule cards, Hitt-Brown rules and EE field glasses.

Beginning with an air gun, which proved too inaccurate, progressing through a single-shot .22-caliber rifle, which was too slow, the choice of a gun settled upon a Model of 1912 Savage (semi) automatic rifle, caliber .22 long rifle. This arm was chosen because it combined with semi-automatic fire (desirable as permitting delivery of fire at approximately field speed) the pre-

eminent accuracy of the .22 long rifle semi-smokeless cartridge.

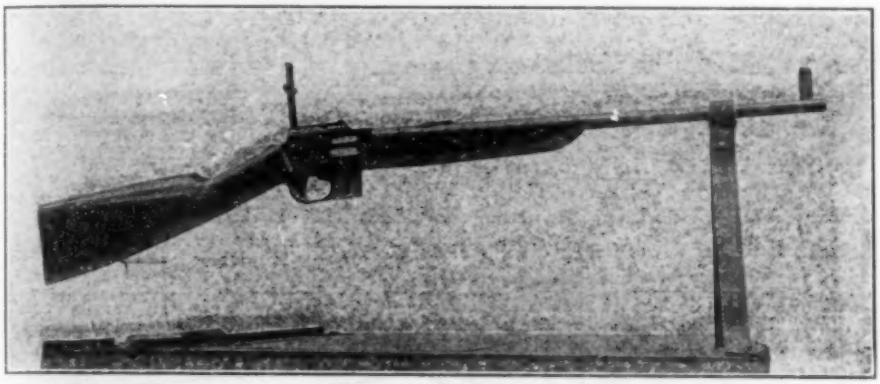
Upon this rifle a Springfield rear sight was mounted with great care to see that it was exactly 22.125 inches from the front sight, the sighting radius of the Springfield. This was necessary to preserve the exact angular value of the range graduations, to the end that they might conform to the angles read with the standard inverted sight scale devices.

To have a sight adjustment for the indoor range, 30 feet, high enough on the sight leaf to admit a wide choice of aiming marks above or below the target, a nearby regimental blacksmith shop was induced to hammer out a front sight of abnormal height. This special front sight required a sight setting of 1,700 to bring the point of aim and the point of impact together at 30 feet. From the same source a bipod was secured.

The backstop was a box 3 feet square and a foot thick, filled with sand. Putting an inch layer of cotton waste between the front of the box and the sand prevented leakage of sand through the bullet holes.

For targets we used landscapes drawn with colored crayons on such oblongs of cardboard as are to be found in any shirt on its return from the laundry. By bearing down hard on the red, black, green and brown crayons in a ten-cent assortment it is possible to render vividly, if not realistically, the "woods in foreground," "lone pine on sky-line," "blue school-house at cross roads," and "red silo at 2.27 o'clock" so inseparable from any real session with target designation. Two such landscapes sufficed for a class, figuring successively in target designation, sub-caliber firing and the "file" of bullet-punctured "records" of past performances.

Owing to a shortage of musketry rules and EE glasses we printed our own graticule cards. They showed a mil scale and an inverted sight scale pro-



SUB-CALIBER AUTOMATIC RIFLE

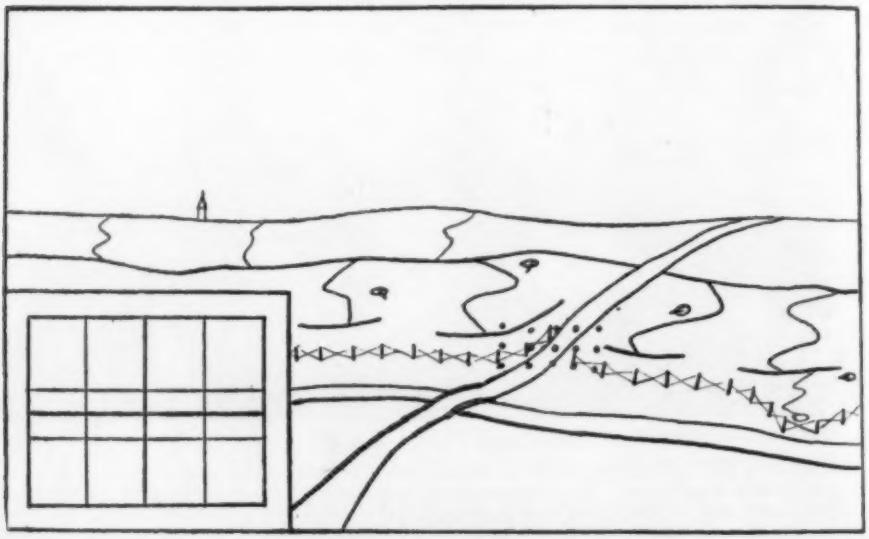
This is a semi-automatic air-cooled, magazine-fed, recoil-operated gun. The breech action is of the "blow-back" type. The bolt is supported at the moment of discharge by the inertia of itself, the slide and hammer (which are in contact with it), and by the tension of the hammer and recoil springs. Magazine, detachable, single-column box; capacity 7 cartridges. Ammunition, the .22 long rifle lesmoke or semi-smokeless cartridge. Rear sight, Springfield; mounted on saddle of sheet brass, which is held to the gun by the take-down screw. Special front sight to give high sight setting.

portioned to use at 15 inches from the eye. What was more important, they bore, in addition to the conventional mil formulae, this maxim: "*Hold range on target; read sight-setting at aiming point.*"

Ten words—and in these ten words all there is to auxiliary aiming point work. Positively all. There were two sergeants once, who, after 20 minutes' instruction based on this maxim, went to the range and—"but that is another story."

promising candidate, one who had manifested a mind competent to revolve with the theory of fire as its axis. He was led up to the target and a tactical situation was revealed to him.

"Here is a machine gun (indicating it with a white chalk mark on the target). You can see it through your field glasses. Your gunner cannot see it through the sights of his gun. The range is 1,700 yards. Select your gunner and give him a fire order which will put him on



NIGHT-FIRING PROBLEM

Inset: Diagram of night-firing box used. At lower right center of drawing, where road comes through wire, distribution of fire possible with aim upon night-firing box.

Also, we used the blackboard and the text-book, and the majority of officers under instruction knew thoroughly the why and wherefore of the matter. All of them knew the "ten-word rule."

Then the old, familiar landscape was tacked on the backstop and the "Baby Browning" set up on a table as far therefrom as the dimensions of the mess shack camouflaged as a schoolroom would permit. A victim was selected. Considerable care was used to find a

this target. *Remember the ten-word rule.*"

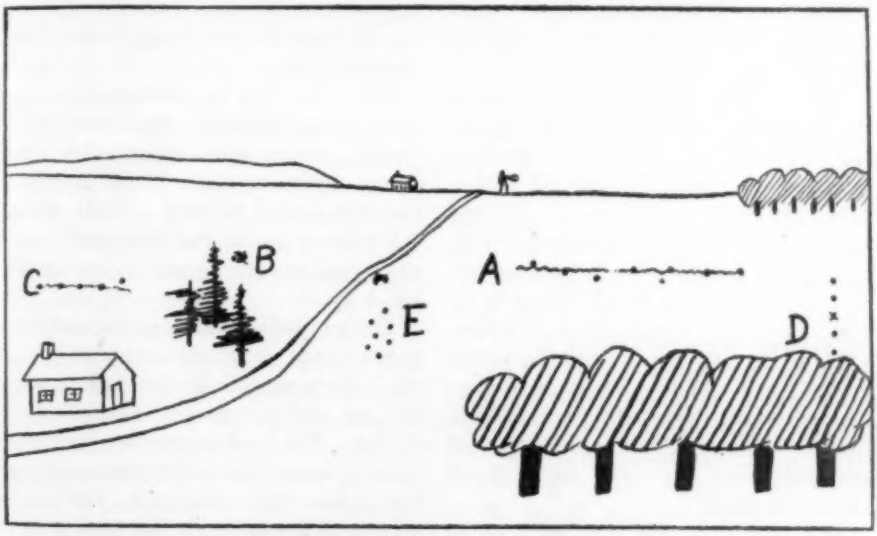
By the time this sort of thing had gone around the class they were getting fire superiority every time. "Point targets" were obliterated with "fixed fire" and "line targets" demoralized by traversing fire which rippled from the little .22 as fast as the gunner could flex his trigger finger. Aiming marks above and below the target were tried out.

The big result was that nobody was

left with any doubt as to the utility of the auxiliary aiming point or of his own ability to use it. They viewed the matter with less awe, but more admiration.

Among the by-products was the discovery that sight-settings ascertained 6 or more feet behind the gun would not put the bullets through the target. A little sermon on "parallax" at this stage of the proceedings could be counted on to bring 100 per cent of believers down given by the bipod, seated position and elbow rest on the table, the competitive feature, which always developed, resolved itself into a contest in the accurate reading of the inverted sight scale.

Absolute accuracy of gun and sights is demanded if this method of instruction is to be a success. If the distance between front and rear sights is not exactly that of the rifle for which the



LANDSCAPE TARGET—SHOT-UP

Group A: Traversing fire; aiming mark, skyline; range, 1,700; sight-setting, 1,450. Group B: Fixed fire; aiming mark, base of pine tree; range, 1,700; sight-setting, 2,050. Group C: Traversing fire; aiming mark, base of house; range, 1,700; sight-setting, 2,075. Group D: Searching from auxiliary aiming point to correct range; target indicated by X; aiming mark, base of tree; range, 1,700; estimated range, not less than 1,600 nor more than 1,800; sight setting, based on 1,600 was 2,150; upward search of 10 mils to reach 1,800; limit of search, middle of bushy part of tree. Group E: Intentional distribution by instructor to show normal appearance of burst of fire aimed at target beside road, 1,700 yards distant, with a sight setting of 1,400.

the sawdust trail. So intensified was this form of error by the extreme shortness of the range that absolutely accurate results were attainable only when the eye of the one employing the inverted sight scale was on a line with the front sight of the gun.

Owing to the accuracy of the rifle and sights and the steadiness of holding rear sight was designed, the readings of the inverted sight scale will not be correct for the gun used. The gun must be perfectly zeroed, that is, it must have its point of impact exactly at the point of aim when the sight is set at the range assumed in the problems. This, of course, is always the same. For the rifle described, it was 1,700 yards. As

roughed out by the blacksmith the high front sight demanded a setting of 1,750 until filed down. Likewise the range must be constant, unless the instructor courts the task of explaining why the point of impact is raised when the range is increased and lowered when it is decreased, in flat contradiction to everything he has taught under the heading, "Theory of Fire."[1]

At the ranges usually available for such work the trajectory of the .22 long rifle bullet is, to all practical intents and purposes, "flat." This complicates the next exercise, "Night firing."

Due to the combined influences of flat trajectory and a bullet started well below the line of aim, it is impossible to miss the standard, 8 by 10, night-firing box on the indoor range. Hitting the box spoils the whole demonstration.

The answer is to reduce all dimensions to one-fifth and set up the night-firing box at one-fifth the standard distance, namely, at 100 inches from the pintle of the gun. Thus an intercept of one-fifth of an inch gives the desired 2-mil interval of search and an intercept of one-half inch gives the usual 5-mil traversing limit.

For the instruction of officers, at least, actual darkness is not required to demonstrate night firing, so no effort was made to illuminate this miniature night-firing box. It consisted of a common "safety match" box, weighted with nails or other heavy junk to hold it steady, having a piece of white paper, properly ruled, pasted upon the side toward the gun.

The original landscape target being pretty thoroughly riddled by this time, we usually tacked up a sketch showing a trench position with numerous "gaps in the wire," "creek crossings," "listening posts," "machine-gun emplacements" and "approach trenches" inviting the nocturnal attentions of the automatic rifle.

Important among the preparations was the anchoring of the gun by means of nails driven through holes in the bipod feet provided for that purpose. This, it was explained, was analagous to shoving the bipod feet of the Lewis or Chauchat into the dirt or driving a crossed stake rest for the light Browning. Unless this was done, the shifting of the gun during firing ruined the demonstration.

With the gun in position and the target designated, the next step was, "with correct sight setting, lay and clamp gun on target." A Lewis magazine box moved forward or back under the lower slope of the rifle stock gave almost micrometer nicety of adjustment for elevation.

The gun being laid and clamped, the gunner then directed an assistant in placing the night-firing box in line with the gun and target and below the line of aim. The last preparatory step was running up the rear-sight slide until the line of aim was deflected to the intersection of the central cross lines of the night-firing box. This accomplished, the school orderly was bidden to "let down the shades of night," with which command he complied by tacking a sheet of opaque paper over the face of the target. The blocking was removed and the gunner ordered to commence firing.

The point of aim was shifted by such commands as "right, two and one-half; up two," until the limits of traverse and search were exhausted. Then the mask was removed and the result inspected.

This exercise not only taught the

[1] A phenomenon due to the fact that the bullet, starting below the line of aim, does not rise above it at any point of the 30-foot trajectory.

methods of laying for night firing but emphasized the necessity for minute accuracy in each step of the procedure if the target were to be hit.

Searching to correct error in range estimation was the next lesson. This required marking the tip of the front sight to measure the desired 2-mil interval of search. Using a sight setting less than the 1,700-yard zero of the rifle and searching up until the target was hit was the simplest demonstration. The really pretty problem was the one involving the use of an auxiliary aiming point as well.

The situation usually assumed was that of an invisible machine gun not less than 1,600 nor more than 1,800 yards distant. With the inverted sight scale a sight setting was determined which would admit hitting the target with aim at a mark below it if 1,600 yards were the correct range. Reference to the Hitt-Brown fire control rule then showed that an upward search of 10 mils would bring the cone of fire upon the target if 1,800 yards were the range. Employment of the mil scale located upon the landscape the limit of search.

So far the instructor had been dealing with actualities. All target results were the product of correct sight setting and accurate aiming and holding. The final demonstration, that of adjustment of fire by observation with the EE glass, involved deliberate "faking" on the part of the instructor. This was always frankly admitted and the exercise classed as an "illustration."

Since the artificial nature of the range and target presented an almost impossible service situation target and point of impact in a plane perpendicular to the line of site, it was, of course, possible to get the full correction by holding the inverted sight scale with the sight setting used at the target and reading the correct range at the point of impact.

This is a paper target situation, duplicating a field situation possible only in rare instances of mountain fighting. What we wished to illustrate was the practical application of an exceedingly workable rule of thumb given in Training Document No. 8, Southern Department, namely:

When the target and point of impact are in a plane rising 45 or more degrees with respect to the line of site, the inverted sight scale reading at the edge of the beaten area farthest from the target will be approximately the sight setting required to get the cone of fire upon the target. This is a very free rendition of the language of the book.

To simulate this upon the landscape target it was necessary to fire a string of shots, only one of which was pulled with aim at the target. The remaining shots were purposely scattered around between this correct shot and the target. Naturally the correction read at the farthest (the only accurate shot) edge of the group was invariably "1700," the sight setting required to hit the mark with this particular gun.

How this form of instruction can be combined with target designation and the issuing of fire orders is quite obvious. It was our practice to demand perfection of this part of the exercise before a shot was fired. The student who could not get off a letter perfect designation and order in three trials was barred from verifying his technical work by firing.

Employment of the EE glass in this form of instruction is possible when a range of 30 or more feet is available, though it is not possible to have both the graticules and the target in perfect

focus at so short a distance. For this reason our most successful work was done either with the printed graticule card or the fire-control rule.

Some measure of success was reported after the employment of the gallery Springfield rifle in a manner similar to this in the Musketry School of the 88th Division. Recent efforts to "sub-caliberize" the Browning machine gun have been mechanically successful and open up possibilities of indoor demonstration of many characteristics of the tripod-mounted gun.

While in no way a complete substitute for field firing, this indoor work affords two notable advantages over outdoor shooting in the preliminary stages of instruction.

First, the shots are plainly and permanently recorded, so that the student gets the full instructional benefit of those which fail to strike the actual target.

Second, the loss of time in scoring and reporting results is completely eliminated, so that it is possible, within the usual time limit, to have every student solve a problem and verify his solution by firing.

Greater, however, than all the other advantages found in this system was the fact that it took the dullness and drudgery out of the study of technic; begun as a lesson it developed into a sport. When the students began to lay bets on the results the instructor could feel that he had the entire attention of the class. Usually there was an "after school" session by officers who had developed theories they wished to verify.

The little sub-caliber auto-rifle not only taught the procedure of aiming at one thing in order to hit another but also demonstrated that a world of fascinating experimentation and diverting sport is hidden behind those formidable portals marked "Theory of Fire" and "Experior Ballistics."

The Price of Helium

Helium before the war was $1,700 a cubic foot. War demanded a non-inflammable gas for balloons, and methods were perfected by which helium is produced at a cost of 10 cents per cubic foot.

Production of Field Glasses

The largest producer of field glasses produced before the war 1,800 pairs per year. At the time of the armistice the company was producing 3,500 pairs per week.

Then and Now

By the Editor

IN Civil War times the line of defense of the South held the left bank of the Potomac from Fortress Monroe nearly to Washington, then to Harper's Ferry, thence through the mountains of Western Virginia crossing the Mississippi a little below Cairo, thence through southern Missouri to the eastern borders of Kansas, and then southwest through the Indian Territory and along the northern border of Texas to the Rio Grande. The length of this line, including also the Atlantic and Gulf coasts, has been estimated at 11,000 miles. The territory included in it comprised about 800,000 square miles and a population of over 9,000,000.

In 1860 the population of the United States was 31,443,321. The military population of the Northern States was 3,769,020. The military population of the Southern States was 1,064,193. The military population of the border states, Kentucky, Maryland and Missouri, was 516,085.

Deducting the men who entered the Northern army from the Southern States and the Southern union men who did not take up arms, leaves the Southern States a military population of 898,184. The enlisted strength of the Confederacy probably did not exceed 600,000 to 700,000 at its maximum in 1863, of which only about 400,000 were available in the field. In March, 1865, the field force is stated to have been about 200,000 men.

The mortality records in the Confederate army are incomplete, but a table based upon this incomplete data shows:

Killed	52,954
Died of wounds	21,570
Died of disease	59,297
Total	133,821

A table prepared by the Surgeon General of the Confederate army shows that one-third of the Confederate army was killed on the field of battle or died of wounds or disease, and that a third was captured and held as prisoners of war.

The military age of the Confederate army was seventeen to fifty.

In all, during the Civil War the North called to arms 2,320,272 men.

The Report of the Provost Marshal General for 1866 gives the total casualties of the Civil War as 912,083. Of these, 96,135 were killed or died of wounds, 199,045 deserted, 183,287 died of disease. This aggregate of 912,083 includes killed, died of wounds, of disease, accidentally killed, executed, honorably discharged, dismissed, resigned, and all other causes which produce discharge from the service.

The loans raised in the North were $2,800,000,000.00. When the final and total cost is considered, pensions, interest on war debt and all other charges incident to the war are included, the Civil War is estimated to have cost the United States in round numbers $15,500,000,000.00 to the year 1909.

Reducing the war quotas to a three-years average the North furnished about 45 per cent of her military population, the South about 90 per cent.

Little attention was paid to censorship during the Civil War, and the conservation of food, fuel and numerous

other commodities was a matter of purely individual or family concern and regulation.

How different in many respects has been the War of 1917. At the date of the signing of the armistice over 25 per cent of the entire male population between the ages of eighteen and thirty-one were in the military service. This represents a growth in the size of the Army in nineteen months of nearly twenty-fold; namely, from 189,674 in March, 1917, to 3,664,000 in November, 1918. On April 1, 1917, the strength of the Army was 190,000, and on November 1, 1918, it was 1,672,000 in the United States and foreign possessions and 1,993,000 in the American Expeditionary Forces. Yet in a brief nineteen months more than three and a half million men were mobilized, housed, fully equipped with munitions and supplies, and the major part of them given a military training that enabled them to oppose successfully the soldiers of the most warlike of the European nations. This achievement is a tribute to the ability of army leaders, trained in dealing with small forces, to adapt themselves with wonderful effectiveness to the new and tremendous task. It is a tribute to the hearty cooperation of every government department. It is a tribute, above all else, to the ability and enthusiastic patriotism of the American people.

The original selective-service law of May 18, 1917, with its subsequent amendments, mobilized the man power of the nation between the ages of eighteen and forty-five, inclusive. Under the original and later acts approximately 23,709,000 men were registered, and slightly over 2,800,000 were inducted into the military service in a manner that was fair to the individual, efficacious in providing the Army with men as quickly as they could be equipped and utilized, and provocative of a minimum of disturbance to the industrial and economic life of the nation.

Our population during the recent war was in round numbers about 114,000,000; consequently we supplied about 16 per cent of our *military* population to the Army during our short war. These figures should be understood as not including the Navy and Marine Corps personnel, nor do they include the large numbers of men engaged in the manufacture of munitions and other necessary civilian activities so vital to making war and keeping the Government going.

The total American casualties to November 11, 1918, when hostilities ceased in France, were given out by the Chief of Staff on November 23 as follows:

Killed and died of wounds	36,154
Died of disease	14,811
Deaths unclassified	2,204
Wounded	179,625
Prisoners	2,163
Missing	1,160
Total	236,117

While the total losses suffered by the American Army in France at first glance appeared to be almost double the total estimated by officers here as probable, analysis of the table, it was pointed out, shows that among the 179,000 wounded are included the names of thousands of men whose injuries were so trivial that they never were admitted to hospitals, and the record of their injury was kept only in company and regimental dressing stations. The final total of killed, died of wounds or disease, or on the unclassified death list, the seriously wounded and the prisoners and missing, officers believe will work out not in excess of 125,000.

The official figures show also nearly

double the number of deaths from disease than have been made public to date. No explanation has been forwarded by General Pershing, but it is assumed that the unexpected increase is due to the wide distribution of American and allied hospitals to which the men were sent, making it a slow process to assemble the data.

The number of Americans taken prisoner by the Germans—little more than 2,000—is strikingly low in view of General March's announcement that a total "in round numbers" of 44,000 Germans had been captured by the Americans. The fact that the American armies had been moving forward continuously since they entered the battle doubtless accounts for the great difference.

The 1,160 men reported as missing probably include others who will be found to have been captured, some whose bodies will never be recovered, and others who may have become lost in the ranks of the French and British forces. The classification also covers the unidentified dead always to be expected when great bodies of troops are engaged.

On October 10, 1918, American troops held their greatest amount of front line, holding 23 per cent or 162.3 kilometers of front, the allied total at that time being 712 kilometers or about 425 miles.

Before the war the United States had a very small army, spending a few hundred millions of dollars. During the war the army had to spend fourteen thousand millions of dollars, and these sums were expended in such a way that there was no graft, very little waste, and almost no delay in payment. Nearly half of this amount was spent to pay, clothe, and feed the Army. The remainder was spent to purchase equipment, munitions, transportation, and services for prosecuting the war.

The Army found it necessary to commandeer hundreds of millions of dollars worth of property for war uses. Every owner of this property was paid promptly and fairly.

To protect the soldier and his dependents the Government instituted the most generous, comprehensive, and scientific system of insurance ever devised, with allotments and allowances for dependents and insurance and compensation for soldiers and sailors.

America's total war expenses totaled $23,363,000,000. We could have, for the cost of this war, carried on the Revolutionary War for 1,000 years.

Of this $2,069,000,000 represented normal government expenditures and $21,294,000,000 represented extra war costs. Of this sum, $14,000,000,000 was spent by the Army of the United States. These figures, of course, do not represent any future payments such as insurance, claims or benefits, which will add large sums to the above.

On May 16, 1919, the Treasury Department announced that our total credits to all allies was $9,370,219,000. This may be considered as a war charge, as we may never demand or receive payment if we think it is more needed by our allies than by ourselves.

As time goes on, wars become more terrific, more awful to contemplate. Everything seems to be in a more concentrated form than previously. Each war is the forerunner of a worse war to follow, and yet we seem to hesitate in formulating a military policy of preparedness.

One has but to compare one war with a preceding one and the necessity for preparedness is foreboding and ominous.

The Warning of the Twelfth Apostle

Why the Principle of "Selection" Is Unsuited for a Democratic Army

By One Who Was Selected

THIS is a day of change—a land of experiment. The success of the political promoter, who prefers to be known as a radical, has become as infectious as the results of his work are frequently vitiating and demoralizing. The necessities of war caused the experiment of government control of railways, telegraphs, and cables, and the people are satisfied to terminate that experiment. The same demand secured nation-wide prohibition, and this experiment the voters desire to continue yet awhile; "for experiment," any very radical change must be termed until it has received a thorough trial and established a praiseworthy peace-time record. The taking over of factories, the requisitioning of entire output or production of certain industries, the control of food, fuel, etc., are other changes temporarily necessitated by the unusual conditions obtaining in the country during the war. In effecting these changes the personnel affected was in no known instance allowed to suffer. On the other hand, wages advanced abnormally, while the individual effort demanded lessened, except for the higher executives.

The Army and the Navy are two of the oldest branches of the Executive Department of the Government. They belong to the people, to the people they owe fealty, and but for the confidence of the people both would cease to exist. Like some of the rights guaranteed by the Constitution, instance the writ of *habeas corpus* and the right of trial by jury. The people are jealous of these branches of the Executive power, and jealous of changes in them which might insidiously lessen their value to a thoroughly democratic nation. Elsewhere they have witnessed the abuse of authority and power, and there is a not-to-be-despised minority who charge that the two services named have not been free from similar abuse. A 100 per cent confidence on the part of the people in these services is an exigency of good government every bit as essential as the sustained value of the American dollar.

While proved business principles should be advantageously applied in all matters of strict business whether in private, corporate, or governmental affairs, care must be taken to safeguard the nation. The U. S. Treasury may serve as an illustration. The nation's gatherer and depository of government funds from all sources, it is also the nation's disbursing agency, but in no capacity does it follow or permit all the well-established and legally authorized business practices common to even the national banks. Similarly, other reasons forbid in governmental affairs the application of methods proved indispensable to success in the largest corporations. Every business and every profession has its psychology, and few read psychology readily or well. The Germans are perhaps the most notable failure here.

Before the war there existed in our Army a strong tendency to accept and adopt, both in theory and in practice, much that was purely German. Frequently the fact was absolutely lost sight of that Americans and Germans represented opposing and extreme political views. Much that is suited for a military oligarchy is unsuitable and even repugnant to the free-born people of this republic. Methods which promoted efficiency in the German army would as surely promptly disrupt our own.

The American Army has always been more intensely democratic than any other branch of the executive. Any other condition obtaining would prove ruination for its established purpose. The democracy of West Point was imbued to the entire Army, which until very recent years it thoroughly permeated. The only Palmerized thing that "is the matter with West Point" is that there has not been and is not *enough of it!* Many of our best officers are not West Pointers; but rather than being a disparagement of West Point, this fact is simply proof of the inborn and developed all-round excellence of these officers. Some of the strongest friends of West Point are to be found among officers who themselves were never cadets. Any experienced officer will testify that West Point training will make a better officer from given material than can otherwise be produced from it; and the severe leveling administered there, the eradication of false ideas of class, the *democratizing* of the corps, lies at the very foundation of West Point's success as a maker of men. That its success here is phenomenal and unprecedented the pages of history prove.

In mechanics, any departure from the simple first principles calls for caution, and the same rule holds in politics. Sane development and "juggling" may by some be confused, but these have nothing in common. The instant the Army ceases to be the people's army, moulded and modeled by the people after serious, careful consideration of all proposed changes, it becomes an army of interests—special interests. As such, the Army would become a danger and a menace to the Government which it is intended to defend and uphold. It would become a tool of political parties in power, a means for rewarding good vote-getting. "Selection" of officers, therefore, as a principle or basis of promotion, is dangerous.

Nor does the service have need of change in the authorized methods of promotion which have best served the interests of these United States for many years. What is needed is that the entire body of officers be well trained and efficient. The President has the authority to assign to special command any officer he may desire; he should have a large body of homogeneously trained officers from which to select, while the officer designated to special command needs in even greater degree the same excellent body of officers to insure the success of his campaign. In these days what is needed is not so much the isolated excellent few as the well-balanced and well-trained whole.

When an officer is commissioned he takes a place in the Army. That place has always been respected. The officer builds thereon his reputation, and this depends on many qualities, among which are judgment, honesty, integrity, fearlessness without foolhardiness, all of which are qualities we cannot with any assurance of accuracy measure in even close acquaintances—it is rare that

we can do so with our most intimate friends. There is no yardstick which can be trusted to truly represent these values. We take most of them on faith, because we know men or think we do; and how frequently we err! How impossible to believe that any weighing of records—cold, unresponsive, frequently biased by friendship and not impossibly by jealousy or dislike—how impossible that such records can show the true comparative value in men of such prime requisites in the ideal officer as coolness, unselfishness, justice, generosity, judgment, honesty, integrity, and fitness to command!

There will come up now and then the old plea that mere elimination of the unfit, of those who have gone down the hill rather than up, will not answer the need of rewarding the genius. The answer is that the scarcity in numbers of the true species of that rare man justifies a disregard of special regulations for his advancement. Genius does not require our care. True genius makes itself so apparent by its own methods, far above the herd, that we may safely leave it to care for itself or to be cared for by special acts by a grateful nation when it has proved itself to be deserving.

The wisdom of any plan for promotion by selection is disproved by the working of that plan in the promotion of general officers during the past fifty years. It has been said that one general officer, called before a senatorial committee for his opinion on a proposal to substitute selection for seniority as a basis for promotion, silenced all further consideration of the subject by that committee by mere reference to the working of the plan as applied to the promotion of general officers. The committee well knew the various influences which served in the selections referred to.

No scheme or plan for promotion worked out as a military theory can be certain of consistent respect and nonabuse, any more than can the acts of justice visited upon offenders, through the sentences of military courts, be certain of respect. The records teem with cases where officers, convicted and sentenced to dismissal, have been retained in service due to political effort in their behalf. The pardoning of a real offender is bad enough, but it breaks no hearts—destroys no foundations. It even permits of being defended at times on the grounds of possible doubt. On the other hand, selection, through errors certain to occur, will prove unfair, unwise and unjust. This strikes at the rock foundation of the people's faith in their Army and at the Army's faith in itself. The good Lord erred once in twelve selections when he chose Judas, so what can mere man accomplish, with the devil egging on every ambitious officer, and, worse yet, egging on his political friends, family, and adherents and making every use of all that is known to appeal to all that is selfish in man!

The word "selection" used as a basis for promotion is most unpleasantly suggestive of rejected fruit, of the remnant counter, and of all that is soiled or discarded. It is a term which would be certain to adversely affect morale in the Army. To apply it to officers promoted would unavoidably and assuredly brand all officers *not* "selected" as unclean, as worthless, and of no account, whereas this would be untrue. When we select fruit from a basket, no one wants what remains. When the counters are mauled over at

Christmas, only a bargain sale, well advertised, can rid the merchant's shelves of the left-over stock. It matters not what the quantity or amount of such remainders or leavings; the percentage chosen may be small, yet all that remains is held in the same unchoice regard.

When applied to promotion, the best definition of "selection" is selfishness. Selfishness is dry-rot in anything, therefore let us be sound.

I

Some Aircraft Ingenuity

The aircraft branch of the Army faced almost insuperable obstacles. The program called for more spruce than was available, more oil than could be procured, more mahogany than export conditions would give. Every problem was met. The production of spruce was enormously increased by army control, but the deficiency still existing was met by introducing fir. To meet the need for oil the Army developed the castor-oil industry from Cuba to California. When mahogany was not available for propellers the Army experimented with white oak until it was proved satisfactory.

¶

Cost of the War of 1917

The total war cost to date, for all nations engaged in the recent war, was about $186,000,000,000, of which the Allies spent two-thirds and the enemy one-third.

¶

Charcoal for Gas Masks

The Chemical Warfare Service perfected a charcoal for gas masks from cocoanut shells or fruit pits.

Armored Cars in Modern Warfare[1]

By Lieutenant Colonel W. D. Smiles, D.S.O.

THE sphere of usefulness of armored cars is more dependent upon the weather and the topography of the theater of war than any other arm of the army. Wet weather in a country with no metalled roads brings operations to a standstill immediately.

The necessity of armored cars has been proved continually in Mesopotamia and Egypt; on the fronts their opportunities, like those of the cavalry, have been few except in retreats. On several occasions in retreat armored cars have held up the advance of an army until artillery has been brought up in strength against them.

The article has been divided into sub-headings—Characteristics, Organization and Equipment, Attack, Retreat, Reconnaissance and Night Operations.

CHARACTERISTICS

Where roads are good and numerous, armored cars are able to travel longer distances in a shorter time than either cavalry or cyclists, and often obtain information which even aeroplanes are unable to secure. Their mobility, too, enables a commander to transfer them rapidly from one flank to another, and thus to turn to account opportunities which otherwise he would be unable to seize.

Armored cars act by fire, and can develop more in proportion to the number of men employed than any other troops. Their normal duties are similar to those of the cavalry, with whom they should usually work in close cooperation.

Assistance of other arms, or more armored cars, are required to protect bridges, defiles, etc., as armored cars are extremely vulnerable in enclosed country. If handled with skill and kept in motion, they have little to fear from artillery fire, and it should always be remembered that the nearer they approach the enemy the safer they will be from shells. Surprise is an important factor in their employment, and, as they have a speed up to 40 miles an hour, concealment until their opportunity arrives is not a difficult matter. The moral effect of armored cars against troops, especially uncivilized troops, is very high.

ORGANIZATION AND EQUIPMENT

The most efficient unit is a squadron consisting of 4 heavy, 8 medium and 4 light armored cars; with a first line transport of 1 petrol tank lorry, 1 water tank lorry, 4 three-ton lorries, 6 one-ton lorry, 3 touring cars, 6 motor-cycles.

Second line transport to be allotted according to the distance a squadron is operating from its base.

One mobile workshop and one stores lorry should always be attached to each squadron.

1. *Heavy armored cars* should be either Peerless or Pierce Arrow 3-ton lorries, with the chassis strengthened to take a 3-pounder or similar gun. The armor plating for the heavy cars need not be thick, as under normal conditions there is no necessity to come closer than 1,200 yards to the enemy. The driver and engine must be efficiently

[1] Reprinted from the *Journal of the United Service Institution* of India, April, 1919.

protected, but beyond this a shield behind which the gun's crew can operate, and sides high enough to cover a box of ammunition (about 20 inches), are all that is required.

The crew of a heavy armored car consists of one officer or N. C. O. and four B. O. R.s and their principal rôle is the protection of the medium and light cars against hostile armored cars, and in destroying machine-gun emplacements.

2. *Medium armored cars* should be Rolls-Royce, a make whose superiority is unquestioned. During the present war, while other makes required tons of spare parts, the Rolls required practically none. The Rolls-Royce cars did the work required under all sorts of conditions, and only failed on one occasion when, after being several hours in action, a bearing on the reverse seized. As all armored cars when in action have to use the reverse continually, it is a point that future designers of armored cars should pay particular attention to. An efficient body design for a medium-powered car has not yet been produced. The present Rolls design has only one machine gun, and no proper arrangement has been made for giving an all-round observation. The double turrets and reverse steering with which the Austin armored cars are built have come to stay, but an observation turret must be arranged from which the officer commanding the car will be able to control the fire of his two gunners, the driver of the car, and also to signal to or read the signals of other cars or troops to whom he may be attached. Rubberine tires should only be fitted when concentrated artillery or machine-gun fire is expected; pneumatics should be used on all other occasions. Rubberines are not satisfactory in tropical countries or for continuous work on badly metalled roads. Twin tires on the back wheels are a necessity. Two armored cars fitted with single wheels were lost in soft ground by the enemy trenches during November, 1916, while cars fitted with twin tires operating over the same ground got away. This incident took place in Roumania.

3. *For light armored cars* the Ford is probably the best design. These carry only a driver and gunner, and can be pushed, pulled or carried over bad places on a road. They are especially useful in operations over rough or soft ground, where the presence of an armored car is required and it is not considered desirable to risk one of the heavier and more expensive cars.

In conclusion, lightness, high clearance, twin tires on rear wheels, and a thoroughly efficient reverse are the qualities most necessary in an armored car. It is the exception nowadays to get an unreliable petrol engine, but the chassis, springs, axles, etc., of an armored car should be especially strong to stand the rough ground over which they will invariably have to travel to reach their objective.

ATTACK

Armored cars are an exception to the rule that once battle is joined, the liberty of maneuver, which the initiative has conferred on the assailant, is limited to what he can do with his general reserve (F. S. R., part 1, par. 100 [2]). If the ground is suitable a feint attack can be made on one of the enemy's flanks, and half an hour later the same armored cars can assist in the real attack 10 miles away. When the ground in No Man's Land is passable, armored cars can render invaluable assistance

to the infantry by pushing forward close to the enemy trenches, where they should be able to develop a superiority of fire, while the infantry advance to the decisive attack (F. S. R., part 1, par. 105 [4]). Except against exceptionally well-trained troops the appearance of armored cars close to the enemy front line has always had the effect of drawing a very heavy rifle and machine-gun fire upon the cars, affording material assistance to their own attacking infantry.

Russian commanders had always this idea in view when employing armored cars in an attack, but I only know of the cars being successful on two occasions. The failures always occurred because attacks intended to be simultaneous were not so in reality (F. S. R., part I, par. 104, 2 III). The mobility of armored cars makes them specially suitable for pursuit, or where ground permits of wide enveloping movement. In places where the ground is suitable armored cars are best employed on the flank or flanks to pin the enemy to his ground, to complete the enveloping movement, or take up the pursuit should the enemy withdraw previously. Barbed wire trenches and shell holes generally make it impossible for armored cars to keep up with an advance, and the roads on these occasions are usually required for the transport of other arms and material more urgently needed. I know of one exception only, which happened during General Korniloff's last advance in Galicia in July, 1917. Two of the Russian armored cars pushed right through with a Cossack division, repairing bridges and filling up trenches on their way. For six days these cars were continually in the front line and advanced nearly 40 miles into enemy territory. This was the Russian army's last fight, however, the whole army collapsing five days later.

RETREAT

It is in rear-guard actions that armored cars are superior to any other arm. Operating on roads which should be well known to them, the cars compel the enemy continually to deploy and give their own tired infantry the necessary time to take up fresh positions. Steps must be taken, however, to secure vital points such as bridges and defiles (F. S. R., part 1, par. 113 [2]).

Armored cars, if handled with skill and kept continually in motion, have practically nothing to fear from artillery fire. During the retreat in Roumania one armored car remained on about 300 yards of road from daylight to dark. Over 500 shells were fired at the car without a hit and only a few splinters hit it, doing no material damage. The element of luck enters largely into armored car fighting. One day during July, 1917, two medium armored cars were knocked out by direct hits. These cars were traveling about 20 to 30 miles an hour when they were hit. A heavy car on the same road was in action for about six hours and got through untouched.

RECONNAISSANCE

Used on this work, armored cars can render much valuable assistance. When the opposing forces have reached striking distance their invulnerability to rifle fire will often enable them to locate the enemy's position with greater accuracy than cavalry or infantry scouts. In the long-distance reconnaissance, armored cars can, of course, cover far longer distances than cavalry, and the latter can be saved for work which the cars are unable to perform.

NIGHT OPERATIONS

In this connection one feels inclined to quote Mr. Punch's advice to those about to get married. In the early days of the war it was usual for an armored car to crawl along a road into No Man's Land at night, the officer commanding the car walking ahead with an electric torch. The car would shell the enemy for a quarter of an hour at dawn, and clear off when the enemy in reply began to drop shells close. Apart from the value of these enterprises (F. S. R., part I, par. 75 [15]), where it is necessary for armored cars to approach an enemy under cover of darkness with a view to attack at dawn, it will generally be found that, owing to their mobility, armored cars can safely be allowed to leave their base at daylight, and will reach the field of battle in ample time for effective cooperation.

With the aid of the powerful searchlights which are fitted to the modern armored cars, they have been found useful at times for outpost duties. When using armored cars at night it should always be remembered that no spare numbers, over and above those essential, are included in the crew of an armored car, hence, if the crew are to get adequate rest, they should not be called upon to do duty at night.

It is certain that the armies of the future will all retain armored cars as a part of their fighting troops. Even in peace time they will always be useful for protection of the frontiers, and in assisting the civil powers in dispersing riots and maintaining order in towns. The bolsheviks used them continuously in all their street campaigns.

Their failures in the present war have usually occurred when they have been ordered to cover ground suitable only for a tank, chamois, or an aeroplane.

Praise for the Regular

The men who enlisted for service are not the ones to come home complaining about the whole army system and particularly about Regular Army officers. Those who know the real inside story will tell anyone that it was a stroke of fortune to work under or with most of the Regular Army officers, who knew how to get the best for their men and bring the most of them safely out of any action.—*Editorial paragraph in the "Sioux City Tribune."*

Military Justice

Not a man was put to death for military offenses during the war.

Varied Ground

Infantry Prestige Strengthened

The editor of the *New York Times* in his issue of Friday, June 13, saw fit to call the attention of his readers to the natural result of the war—the recognition of the prestige of the Infantry. He says:

Statistics now available show that in the American forces, of the battle deaths, amounting in all to a little over 46,500, the Infantry had a little less than 42,000, the comparatively small remainder being divided among all the other branches of the service, with the Artillery standing second and the Engineers third in the list of total losses.

These figures would be misinterpreted, of course, if they were taken as revealing who it was that did the fighting and brought the war to a close, for, so far from true is it that the Infantry were almost everything and the other departments next to nothing, in reality the several departments can be called of equal importance in the sense that all of them are vitally necessary to the achievement of military success. That the Infantry is the head of the spear, the edge of the sword, is also true, however, and this was always the case—always they went into the greatest dangers and had the greatest number of battle losses.

In this war it was the old ratios, rather than the old rules, that were changed, owing in part to the use of much larger cannon than ever before, and to the almost complete disappearance of cavalry activities during long periods that were marked by the very hardest fighting.

To this change in the ratios of losses endured must be ascribed, at least in part, an appreciable elevation in the prestige of the Infantry as compared with the Artillery, the Engineers, and the Cavalry. It is to the Infantry, now, that come the most frequent and the greatest opportunities to win glory, and, incidentally, to earn the swift promotion that every real soldier values so highly as the reward of his services, the consolation for his hardships.

Depreciation on this account of the other services would be both absurd and outrageous, but it seems to be a fact that the old eagerness to enter them, and the old contentment to remain in them, have both somewhat decreased among ambitious young officers.

Good Advice

The commanding officer of the Reserve Officers' Training Camp at Camp Lee, Va., put the following folder in the hands of each student upon his arrival at the camp—a very helpful idea:

CAMP LEE, VA., *June* 21, 1919.

FROM: The Commanding Officer, Reserve Officers' Training Corps Infantry Camp.

To: The Student Body.

This folder is sent with the hope that it will be of service to you. You are requested to read it attentively and to keep it with you for reference.

The purpose of this camp is twofold—Physical Improvement, and Development of Leadership. The degree of success attained will depend upon the united efforts of instructors and students.

You are here to make a good record individually and collectively. At the same time you have the reputation of your college R. O. T. C. Unit to sustain. Every opportunity will be given you to accomplish these three things.

Here you will meet and mingle with men from other colleges and states. The association will be beneficial, if you make it so. The opportunity lies before you for broadening your acquaintance and acquiring a better knowledge of yourself and your fellow-men.

The duration of the camp is brief. The greatest benefits will be derived

by those who maintain a resolve to do their level best in all things and at all times.

The *spirit* of the Reserve Officers' Training Corps is "*Loyalty and Service.*"

To become an effective leader one must first be an efficient and loyal subordinate. One must possess a *true* character that others can recognize and respect.

One who hopes to control others must first become master of himself. Must have *self*-control, as we say.

The military science is an applied science, the technic of which is to be acquired only through repeated practice.

In our camp course we shall not go very deeply into the subjects taught, but our object will be to persist in those things undertaken until we shall have accomplished precise exactness. If you reach this standard you will have increased your value in any walk of life, and your next year's work in college or elsewhere will be more efficient and pleasant to you.

Discipline is a fundamental principle of the universe. All creatures and all things obey the laws of nature or they become maimed, or perish. Discipline is the foundation of organization, social, business or military. Without the cementing influence of discipline, organizations go to pieces. It is the *spirit* that keeps life in the corporation.

From the time you enter this camp until the time you leave you will be under a strict but kindly and just observation. You will be constantly confronted with situations calculated to test your character and capabilities. These tests will not be devised to place you in a ridiculous situation or to embarrass you. You will probably be unconscious of them. The truest results will follow if you will *work* when you work and *play* when you play.

It is the intention to make this camp both instructive and pleasant. A great deal of thought and energy has been expended upon provisions for recreation and amusement. You are expected to enter into the activities promoted by the camp commander through the agencies at his disposal and to cooperate in making our camp one which we will all remember with satisfaction.

Remember that you can always confer with your company instructor on personal matters and that by doing so you will afford him pleasure, and should you desire you can always obtain permission of your company instructor to consult me and I cordially invite you to do so.

Marine Corps Publicity

The following is quoted from a page in Book No. 2 of the Marine Corps Educational Series. We disagree considerably with some statements herein made.

When you are entitled to wear this device on hat, cap or helmet it means that you are a U. S. Marine trained as an infantryman, artilleryman and signalman, and that you know many of the duties of the sailor. All Marines enlist as Marines and not for any particular branch of the Marine Corps Army. Yes, the Marine Corps is an Army. The Army of the Navy! Find out about it. A free illustrated booklet for the asking. Write for it today. U. S. Marine Corps Publication Bureau, 117–119 East 24th Street, New York City.

Airplane Safety

The next decade promises to produce a commercial development of the airplane far surpassing the achievements of the war period, great as these have been.

Those interested in the development of aeronautics must, however, be fully alert to present-day limitations, in order that the development may be along lines productive of the highest achievement and the greatest safety.

The chief obstacles to be overcome are the danger of fatal accidents and relatively high cost of operation. There is no doubt, in the minds of those who are conversant with the subject, that the skill of our engineers will ultimately triumph in both respects.

Essential also to the most rapid development of aeronautics is full popular support. The enthusiasm and interest of the public have already been aroused to a high degree by the splendid achievements of our war aviators, the Liberty Loan flights, the successful transatlantic flights of Captains Alcock and Brown, of Lieutenant Commander Read and the NC-4, and by the more spectacular but less successful attempt of Hawker and Grieve.

This public interest is the most valuable asset possessed by those interested in aeronautics today. It is vital that it be maintained and educated in the right direction.

Aviation appeals to the ideals and imagination of the people. Unfortunately, however, it must be recognized that the average man regards aviation as exceedingly dangerous, and to attain full popular support we must make aviation more safe and then educate the public to the true state of affairs.

Every serious accident is published on the first page of all newspapers throughout the country. The average citizen reads the daily paper and is impressed by the number of fatalities recorded.

It is therefore of utmost importance that during the commercial development era we are entering all possible means be taken to eliminate accident and recognition given the fact that public support will be in inverse ratio to the number of serious accidents recorded.

Fatal accidents may be grouped in three general classes: (1) Failure of the pilot; (2) failure of the plane; (3) failure of the power plant.

Failure of the pilot is the most difficult to guard against. The bureau charged with granting civilian licenses is, however, insisting upon a high standard of personal efficiency. This must be rigidly maintained.

Failure of the plane is exceedingly rare. Recent statistics show that only 7 of 288 fatalities were caused in this manner. In this respect it must be recognized that the risk in standard types of planes is practically negligible and that most of such failures occur in experimental planes. The public should be brought to an understanding and recognition of these facts and be taught to differentiate between standard proven types and experimental designs.

Failure of the power plant resulting in accident is more frequent. This necessarily results from the conflicting demands of reduced weight and increased power. Stresses on the high-powered airplane engine and high-speed propellers are enormous. Breakage of propellers and crankshafts is consequently still comparatively frequent.

The solution of this problem is twofold: (1) By improved design and material, to reduce the danger of such breakage; (2) by the employment of the automatic ignition interrupter to limit the serious consequences of such breakages when they do occur.

Serious consequences from breakages of this nature are due to the unbalanced torque under the continued development of power. In many cases the pilot cannot act quickly enough to prevent serious damage and even fire, and hence the necessity of adopting an automatic device to accomplish this end.

While contributing to fatal accidents in a considerable degree, propeller and crankshaft failures involve, in the large majority of cases not resulting fatally and hence not brought to public notice, extensive damage to motors and planes unless power development is automatically arrested by an interrupter.

The interrupter has been in use by

the Navy during the last ten months, and officers who have had experience with it have expressed the opinion that it is an absolutely essential safety appliance.

A description of this instrument appeared in the March 1st issue of *Aviation and Aeronautical Engineering*. It is essential that every means possible be taken to safeguard aviation, and the use of the automatic ignition interrupter should be insisted upon.

When the public begins to realize that a trip by airplane can be made with comparative safety if the proper precautions are taken, the interest now being manifested in aeronautics will assume a tangible aspect and will hasten the day when the United States can assume her rightful position as the pioneer leader in aerial navigation, and assure to her people the vast benefits that may be reasonably expected to accrue.

Insignia of 7th Infantry Division

We are in receipt of an explanation of the 7th Division shoulder insignia from the general officer in command at the time of the adoption of the insignia. It is quoted herewith for information of those who may be interested:

In casting about for an insignia or symbol for the 7th Division, the first thought was to adopt a pyramid upon its apex with the figure 7 enclosed, stem towards the apex of the pyramid. Now if the pyramid were red in color it might by many be called a red triangle. This would result in confusion with the Y. M. C. A. symbol. The suggestion of the chief of staff of the division was then adopted, and two black pyramids point to point were chosen.

The first idea was simply to use the symbol in marking baggage in sending it overseas, the wearing of insignia being forbidden at that time. Later, in France, when the use of division insignia was authorized, it was realized that it would be difficult to attach the adopted insignia to clothing and keep the two pyramids in alignment without having a base or background. The suggestion of one of the assistant chiefs of staff was then adopted and the result was the present shoulder insignia of the division —two black pyramids superimposed on a red base.

Editorial Department

"The Queen of Battles"

It was a beautiful day in June last year in the Marne valley. A French division was giving a demonstration of the attack of a strong point. All arms were there, infantry, artillery, tanks, machine guns, engineers, and airplanes. The French officer who explained the problem and described its progress had great difficulty in making himself clear in English. At times he would say: She is checked," or "She advances," and his hearers wondered for a time who "She" was. "She" seemed to be the heart and soul of the whole problem. He spoke of her so anxiously, so reverently, and with such assurance that eventually his hearers understood.

"She" was the thin infantry line of attack. When "She" was checked the planes, without delay, must find out why and where, and the artillery and tanks must throw all their strength against the thing that checked her.

This simple and complete acceptance of their part by the auxiliaries was the best lesson of the day's work. There was no question, no hesitancy, no doubt of their relation to the Infantry. It was not simply doctrine; it was a rule of action; they knew it; it governed all their movement and their thoughts. The Infantry accepted it as their due. To the division engaged in the demonstration all this was obvious, but not so to all the American officers who were watching, perhaps for the first time, a combined action of all arms.

Doubtless all of them had been taught that all other arms exist as aids to the Infantry, but they were not imbued with this doctrine or prepared to shape all their actions and lay down their lives in accord with it. Many artillerymen still announce that they conquer in order that the Infantry may occupy. It was not long ago that we were being told that gas or tanks or airplanes or ships, or even food, would win the war.

This last war and every other war of any magnitude was not won until the Infantry, assisted by all of its many aids, had imposed its will on the enemy's infantry. Let us not forget this. Let us never be led astray by false prophets or men who, immersed in the study of their own arm, forget this fundamental fact of war. If you belong to an auxiliary arm you must subordinate your training, your organization, and your thoughts to the needs of the Infantry. Only by such a policy can you hope to be of adequate use to the arm for whom you exist.

This proper relation of all arms to the Infantry goes much further in its application than to divisions, corps, and the army. It extends throughout all our means and organization for carrying on war. We have said that the decision is only reached by Infantry action. This is true in any case. A naval engagement simply decides upon whose soil the final battle will be fought. A harbor defense action will in the end simply determine whether the *Infantry* of the enemy will land conveniently in a sheltered port at his pleasure, or be forced to come ashore on the beach to the great advantage of our *Infantry*. If we gain control of the sea we will invade the enemy to secure a decision with our *Infantry*, and *all* arms, as aids, will accompany it. If we lose control of the sea we will be invaded, and all arms, as aids to the Infantry, will take part in the struggle with the invading force. In either event there is no arm, no soldier, no camp follower who does not owe his allegiance and the subordination of his spirit to the arm for whose aid he is created.

Heretofore the elements of our defense have been scattered in times of peace in small detachments from Portland, Maine, to Tientsin, China. They have been controlled through administrative departments which have little or no relation to our problems of defense.

Their peace-time organization and training should be such as will make real their very simple and direct relation to the Infantry—just as war makes it real. In this lies the true reason for the divisional and corps organization to be maintained in peace as well as in war. We all recognize the great necessity for "teamwork" in war. We have taught it in our schools, we have preached it in our regulations, yet we have never recognized it in our peace organization, and we cannot have it except as a result of such recognition.

With all the elements of the national defense organized in army corps and trained as aids and not as little independent units, their true relations to the whole would be a matter of discipline and training, and not a matter of doctrine to be appreciated only after the emergency comes. Not the least of the many advantages of such organization would be the brotherhood and the understanding of each other's problems that would surely come from daily contact in common service. In no other way can the auxiliary arms hope to appreciate the needs of the Infantry and train to meet them. In no other way can the Infantry realize the power or appreciate the limitations of its aids. This union will result in more than common doctrine; it will result in a common understanding, a common purpose and, better yet, a common action—which is teamwork.

We desire to gratefully acknowledge the above graceful and effective editorial which appeared in our valued contemporary, the June, 1919, number of the *Journal of the United States Artillery*. The attitude and spirit described above is the sort which wins battles and makes an army in peace time. It is a clear portrayal of that perfect harmony and unity of action which our several sister services have displayed with such victorious effect during the war.

The Infantry needs the artillery and there exists a mutual feeling of respect and loyalty between us. We are always glad and anxious to further such feelings. All together, let's advance!

¶

Peace and Demotions

Peace may be at hand, or it may not be, for all signs fail in wet weather. At any rate, peace daily comes nearer and, with it, complete demobilization and the return to a peace footing. Most officers who now are serving with emergency rank will return to their normal grades and watch the wheel of fate grind out its files until the coveted next grade is reached.

With the absurd idea of promotion by selection being always a slight menace, one necessarily cannot fail to think how simple a thing it would be to demote the favored scion of a prominent father today and select him for promotion tomorrow. The loss of but a single day's pay and the trouble of computing dates and allowances would be mere tickets into the Pearly Gates of Selection. St. Peter, the gatekeeper and examiner for all those who enter therein, would not ask questions about a pass bearing the finger print of his Boss. To do so would be to injure his chances of selection for a higher post in the Household Retinue.

But this condition of promotions would not bring a peaceful frame of mind, hence we must confine ourselves to peaceful demotions. So when the axe falls and the stars or the eagles or the leaves fall to the earth with a sickening thud, let us watch the fall with good grace and a full realization of the order of things, for it changeth not.

"So live that when the summons comes to join" that body of officers of lower grade, you can pin on the insignia of your former subordinate and be a

more efficient captain now than if you had never been a field officer.

¶

The Feast of Belshazzar

If one attributes the defeat of the Marne in great part to the German pride, it is just to say that British pride is responsible for two grave checks to the allied cause, Gallipoli and Kut-el-Amara.

In the beginning, William II spoke of wiping out "the miserable little Army of Marshal French," which, however, was the force that swung the balance against him at the Marne.

The English, on their side, have always affected a profound disdain for the Turkish army, which inflicted on them two sanguinary defeats at the Dardanelles and on the banks of the Tigris.

As much in one expedient as in the other, final failure was clearly due to lack of preparation and to ignorance of the resources of their adversary. The harsh lessons of the first part of the war in the Transvaal were not sufficient for the English, and their method of carrying on war up to the present gave them credit for little foresight.

The army which fought in France appeared, as far as one can judge, to have been seriously organized and trained by men familiar with war. The expeditions against the Dardanelles and Mesopotamia were undertaken by dilettantes without military experience. Good men were lightly sacrificed to end, on one hand, in an inglorious retreat, and on the other in a shameful capitulation.

The responsibility for these checks does not rest upon the English troops nor their immediate leaders, who performed prodigies of energy and valor. It rests upon the English people themselves who, for centuries, have neglected their military establishment and on the government, ignorant of all that concerns war.

The United States has been favored by the "God who looks after orphans, etc.," for a long period of years. Let us read between the lines on the wall at the feast of Belshazzar.

¶

The Porto Rico Regiment of Infantry

The Porto Rico Regiment of Infantry has always played an important part in the Americanization of Porto Rico. No other single element or institution has done more, probably not as much, along these lines than has this excellent regiment.

In the days when infantry officers were carried in the journal books by regiment, the Porto Rico Regiment was always seen in the top group with a showing usually of 100 per cent membership.

At present there is considerable discussion on the matter of the independence of our island possession. What it may come to one cannot say, but we cannot think that the "principle of the self-determination of peoples" has any bearing on the case in point when one considers the rag-carpet mixture of races which visit our polls at every election.

However this may be, it is thought that the Porto Rico Regiment should be a part and parcel of our Army in every sense of the word. Officers and men should have the same status which officers and men of any other regiment have.

In this way the attitude of the Federal Government may best be illustrated to the inhabitants of Porto Rico. The

manner in which their regiment and its personnel are treated and considered would seem to be a fair indication of the attitude of the Federal Government toward the people of the island and their status within the Government.

Service Ribbons and Badges

We have had ribbons, badges, and medals for years. They have heretofore been awarded in a very peculiar manner, to say the least. The Victory Medal is, however, an exception. It is thought that the orders issued concerning the Victory Medal are not only comprehensive but just. All who served during the war are recognized. A few bits of metal are added to the ribbon for those who were fortunate enough to reach the zone of operations. This is correct procedure.

Take, for example, our Philippine Insurrection Badge. The Commissary Sergeant of Cuartel de España in Manila in 1900 is entitled to the same badge as the hero of the bosque who fought in many engagements with the insurrectos. The Commissary Sergeant of the Transport Service at San Francisco at this same period is not entitled to any ribbon denoting his valuable service in helping to quell the insurrection, notwithstanding the fact that his work was vastly more important than his brother-in-arms at Cuartel de España in Manila. This is not correct procedure and never has been nor will it ever be. It would be a simple matter to rectify our past mistakes at this time.

Whenever a service ribbon, medal or badge is issued, it should be issued to all who were performing service under the flag during any part of the period of time covered by the award. Clasps, stars or other similar marks of distinction can then be added to the basic ribbon to denote fuller individual active participation or individual citations not entitling the recipient to a distinct honor decoration. This is a sound principle, and all soldiers would be highly pleased with such methods. No doubt the psychological effect of decorations is great. Recognition of service of whatsoever character is bound to be appreciated always, and it is thought that we do too little of it.

With the remolding or remodeling of the Army must come certain innovations and corrections. One of these should be the correction of existing lack of method in the award of our service ribbons, badges and medals. We should conform to the Victory Medal policy in all our service decorations. We must recognize valuable service, wherever rendered.

Preparation and Pages

A goodly part of the officers of our Army have returned from active service overseas. Another part just as good have become more or less settled into the ways of peace after most strenuous service at home. The time for reading, study, discourse and writing has redawned upon us, and your JOURNAL is and should be the medium for the exchange of professional thought.

Many officers, as a result of the war, have somewhat crystallized or changed their views and ideas on various subjects of vital interest to all of us. Can it be that they are not willing to do a bit of missionary work and let the rest of us know what is good for us? This cannot be the case. The fact is that with peace comes a certain lethargy induced by a desire for a rest after

arduous labor well done. This, however, should not continue. The rest period is almost past, and our schools and the training of a new army along new lines with a partially new organization will soon start.

It is therefore high time that we settle down to business and commence our peace life of preparation for emergencies. In this preparation, which before the war we had carried on so thoroughly with what we had at hand, lies the secret of our success, *i.e.*, the ability of the "little old regular army" to spread itself out, even ever so thinly, and yet perform the Herculean task of raising and training an army of three million men—the World's Victory Army.

Realizing all this to be axiomatic your JOURNAL is at your service, it even invites you to put your ideas, your experiences, your observations, your problems and your conclusions on paper and then send them in to the editor, so that your brothers-in-arms may derive the same benefits you have derived in the course of preparation of your contributions. It will be readily understood that the JOURNAL is what infantrymen make it and not what the editor —sometimes called the bag-holder— endeavors to make it. Let us have your thoughts for these pages. In these days of the printing press, universal education and wide reading, preparation of the professional infantryman means pages in this JOURNAL.

Sic Transit

Recent General Orders abolish what we have always known as the "Army blue." Thus passeth whatever remained from the world cataclysm of the pomp and panoply of war, or, rather, of the dress parade and the martial tread through city streets before the eyes of admiring thousands.

Long ago the civilian male gave up the satin "small clothes," the ruffled collar, and the opportunity to exercise individuality in color and taste in dress. For nearly a century he has garbed himself in sober black for gala occasions. But the military retained the bright colors, the scarlet, the yellow, the blue, though in gradually diminishing quantity, as the horsehair plume gave way to the bell-shaped cap, even if the latter still retained its embellishment of gold embroidery.

The "Army Blue!" What a world of romance and tales of valor cling to the memory of the accomplishments of the eminent soldiers who added luster to its color.

As we look back at life on the Plains, we who knew the "Old Army" see how ill adapted it was to campaigning over the alkali reaches of our western states. Yet Nature, as ever, added her protective coloring even to the army blue, as a glance at any of Remington's sketches will show, the bitter dust of the march turning the whole column into an olive drab, even though the "O. D." was an unknown term in those days.

But what will the future Ogdens do when they come to sketch the "Uniforms of the Army of the United States?" What will the artist for the recruiting poster do to lend charm and attractiveness to the lure he holds before the eyes of the seeker after new adventure. All his skill must of necessity be exercised on his tropical backgrounds, or the red glare of bursting shells, Very lights, and other realities of service, for the man himself fades into the background, hidden by the protective

coloration which has now been decreed as the future uniform.

As to the necessity for the change, for the abolition of the blue, opinion will differ. One officer, just returned from overseas, says he would have two uniforms—a battle costume of brown denim with no particular attempt at anything but the quality of serviceability; and a dress uniform with all the style and fit it is possible to put into it, both for officers and men, and with plenty of embellishment in the way of color or gold lace. Its cut and fit would add grace to almost any figure, and the individual would be proud to have his best girl see him in it. He himself would gain an added dignity from the knowledge that he was well attired. We all know the story of the eclipse of the brass buttons of the English uniform, the sorry tale of slovenliness that followed, and the quick return to the button-stick and brush. There is a mental attitude here that we cannot afford to overlook. As Napoleon said, "In war the moral is to the physical as three is to one."

A Grateful Recognition

The Infantry Association has long believed that the officers and soldiers who have been awarded the Medal of Honor and the Distinguished Service Cross should receive some further recognition than comes with the mere possession of these decorations, great honor though these be.

It has therefore decided to contribute its mite towards this recognition and will elect to honorary membership for life in the Infantry Association all those officers or soldiers, without distinction, who have been awarded either the Medal of Honor or the Distinguished Service Cross. As a further mark of grateful recognition of the services for which the decorations were awarded, the INFANTRY JOURNAL will be mailed to the Medal of Honor men for life and to the recipients of the D. S. C. for a period of five years, each at the expense of the U. S. Infantry Association.

In order that the Association may be able to carry this plan into effect it will be necessary for those who have received either of these decorations to send us their names and correct mailing addresses, and this we hope they will do as early as possible.

Members of the Association who read this notice will confer a favor on the editor of the INFANTRY JOURNAL if they will give as much publicity as possible to the action taken, in order that all those entitled to it may be enrolled in the Association and placed on our mailing list.

Book Reviews

The Cup of Fury, by Rupert Hughes. New York: Harper and Brothers, 1919. Cloth, 8vo, 350 pages, illustrated. Price, $1.75.

A novel of the first order, of cities, shipyards and German machinations. Mr. Hughes has again given the reading public a book exceedingly worth while and at the moment so apropos that one can hardly fail to gather new ideas as to the ramifications of Hun intrigue and that hypocritical term "Kultur."

Imagine a young, attractive American girl being adopted by treacherous German foster parents who use her as a tool in their unscrupulous business without her knowing what she is accomplishing for them, and then you have the vortex around which the gripping story is woven.

Dinsmore Ely, by 2d Lieutenant Dinsmore Ely. Chicago: A. C. McClurg & Co., 1919. Cloth, 12mo, 215 pages. Price, $1.25.

Senator Sherman said in the United States Senate: "The message of Dinsmore Ely indicates a spirit of devotion to the public defense which is equal to anything since the days of the Revolutionary War or the War for the preservation of the Union." This little book, a collection of letters of Lieutenant Ely to his parents, was prepared for publication, and an introduction was written by Dr. Jas. O. Ely, the father of the young hero.

To read this book is to have a higher appreciation of service and a consequential increase in one's patriotism and all that is noble in life and the hereafter.

A remarkable young man of highest character was Dinsmore Ely. Shortly before his heroic death he wrote home: "And I want to say, in closing, if anything should happen to me, let's have no mourning in spirit or in dress. Like a Liberty Bond, it is an investment, not a loss, when a man dies for his country. It is an honor to a family, and is that the time for weeping? I would rather leave my family rich in pleasant memories of my life than numbed in sorrow at my death." The beautiful thoughts of a noble youth is this book.

Frontiers of Freedom, by Newton D. Baker, Secretary of War. New York: George H. Doran Company, 1919. Half cloth, 8vo, 335 pages. Price, $1.75.

This book contains the text of Secretary of War Baker's addresses to the various units at the front on the occasion of his recent visit to France. The eyes of our people have been and will be for some time focused on the War Department. Questions have been asked which only the Secretary of War can answer. In a somewhat inspiring and clear manner Mr. Baker explains just how the United States conducted this war. His detailed explanation of our war activities delivered before the Senate Committee is a very good presentation of our national effort during a great crisis.

Mr. Baker's visit to the battle-front and his impressions and conclusions drawn therefrom give the book an added interest. An estimate of Mr. Baker's attitude toward war, and this war in particular, can be gleaned from the book.

America's Munitions, 1917–1918. Report of Benedict Crowell, The Assistant Secretary of War, Director of Munitions. Washington: Government Printing Office, 1919. Cloth, 8vo, 592 pages, with numerous illustrations.

The Director of Munitions has here a very complete report much enhanced in value by the very excellent cooperation and collaboration of experts and specialists in each phase of munitions production. Except in two instances no mention is made of secret devices invented during the period of the war. Due acknowledgment is made to the various essential agencies such as the War Trade Board, Food and Fuel Administrations, etc., for their assistance in the mobilization of our national resources. In seven chapters headed Ordnance, Air Service, Engineer Corps, Chemical Warfare, Quartermaster Activities, Construction Division, and Signal Corps, Secretary Crowell has produced a report which is exceedingly valuable not only as a matter of interest but also for accurate information on our massive munitions problem, as the accuracy of all statistics and direct statements of fact has been checked and approved by the Statistics Branch, General Staff.

The Navy and the Nation, by Josephus Daniels, Secretary of the Navy. New York: George H. Doran, 1919. Half cloth, 8vo, 348 pages. Price, $2.00.

This book is a collection of addresses by the Secretary of the Navy. After reading the book one is impressed with the big idea of the Navy, the spirit of cooperation, which inspired the citizen and sailor alike.

The nation is whole-heartedly proud of its Navy. Its feats have rarely been equalled in the history of sea operations. Having been the executive head of the Navy, one of the most stupendous the world has ever seen, it is apparent that Mr. Daniels is in a position to tell the people something of their Navy, its traditions and ideals. So to speak, he was the bond between the people, who could make the dream possible, and the fleet, which made it a fact. The picture one gets in these interesting pages of the Navy at work, its contracts with industry and science, its many activities ashore and afloat, will remain memorable to the reader.

THE UNITED STATES INFANTRY ASSOCIATION

"The object of the Association shall be to promote the efficiency of the Infantry arm of the military service of our country by maintaining its best standards and traditions, by fostering esprit de corps, by the dissemination of professional knowledge, and by exchange of ideas as to the utilization of such knowledge with particular reference to the rôle of Infantry in modern war."—Article III of the Constitution.

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CONDITIONS OF MEMBERSHIP

All commissioned officers in good standing, or former commissioned officers of honorable record of the regular or volunteer military or naval service, including Reserve Corps, and of the National Guard are eligible for regular or associate membership in the Association. Membership dates from the first of the month following the date of election.

Dues are $1.00 annually, payable in advance. Members may obtain the JOURNAL for $2.00 per year.

All communications should be addressed to the Secretary, the United States Infantry Association, Room 508, Union Trust Building, Washington, D. C. Cable address: Infantry, Washington.

Making Contact

As a rule the efforts of the motion-picture producers to weave a story and connect it up with war pictures results in causing a good deal of amusement to men who really know the Army by the very absurdities which are allowed to creep in through ignorance of the real conditions that surround the soldier's life. An exception, however, occurs in the case of the picture representation of the story of Whittlesey's "Lost Battalion" in the Argonne. In the early stages is shown the operation of the draft, embracing within its encircling arms all creeds and conditions of men, and their quick assimilation into the ranks of the Army. The mobilization camps were surely illustrations of Zangwill's "Melting Pot." If such there still be, it will do any doubter of the value of military discipline good to see the picture.

This picture will appeal to thousands, just as the action of the commander of the 29th Infantry appealed to a score when he had the delegates to a press convention out at Camp Shelby and, by practical illustration, showed them just how the soldier lived his daily life, magnifying nothing, concealing nothing.

Others of our commanding officers cannot do better than follow the same course. The more people there are who learn about the Army first hand and from personal contact, the better for the Army. We have nothing to conceal and much to be proud of. And when we can show these newspaper writers and other visitors that every commissioned officer in camp is a member of the Infantry Association we will be in position to substantiate our claims to be team workers.

If these paragraphs have seemed to convey a hint of expected action, the anticipation can be turned into realization by a signature in the blank below—your own, if necessary; or that of a friend if you have already affiliated.

APPLICATION BLANK

PLACE.....

DATE.....191

The Secretary:
UNITED STATES INFANTRY ASSOCIATION,
UNION TRUST BUILDING,
WASHINGTON, D. C.

SIR:

Please enroll me as a member of the United States Infantry Association. I enclose herewith.....for $3.00 for the first year's dues and subscription to the INFANTRY JOURNAL, which please send until further notice to the address given above.

Respectfully,

Name.....

Rank.....

Dues and subscription $3 a year, payable in advance

Advise us if you do not receive your Journal and be sure to notify us of every change of address.

Infantry Journal Advertiser

GENTLE HINTS
No. 55

WASHINGTON, D. C.,
AUGUST 1, 1919.

1. "Contact!" comes in staccato tones from the aviator, as he switches on the current that makes his airplane a thing of life and action.

2. Contact with the readers of the INFANTRY JOURNAL is similarly established by our advertisers the moment the successive issues of the magazine come into their hands.

3. Have you ever watched the process? First the hasty glance through the table of contents, with mental note of interesting articles for early reading; then the idle turning over of the pages of the advertising section in search for what may be new and interesting.

4. The lesson we would impress on our advertisers is the advantage of frequent changes of copy. Like the debutante, always clean and attractive, but with an added charm due to change of costume.

5. Typography offers an endless change of style and form, and the services of skilled typesetters are always at the disposal of our advertisers either for suggestion or development of ideas.

6. Thus the same energizing current flows through the advertising pages as thrills through the motor at the aviator's "Contact!"

7. Contact with our readers is easy, because they are a compact body of men with ideals and identity of interest who believe in cooperation. Believe in it because it is the Infantry Way! Because it is the Only Way!